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PROCEEDINGS OF THE NEW YORK STATE CONVOCATION ON EDUCATIONAL COMMUNICATIONS (NEW YORK CITY, NOVEMBER 22-25, 1964).

BY- HUBBARD, RICHARD D.
NEW YORK STATE EDUCATION DEPT., ALBANY
NEW YORK STATE AUDIO VISUAL COUNCIL, EAST MEADOW
NEW YORK STATE EDUCATIONAL RADIO AND TV ASSN.

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THIS SUMMARY INCLUDES SELECTED PRESENTATIONS MADE AT THE CONVOCATION, IN THE AREAS OF APPRAISAL OF MEDIA AND MATERIALS, EDUCATIONAL TELEVISION, ELECTRONIC CLASSROOMS, INSTRUCTIONAL FILMS, PROGRAMED INSTRUCTION AND TEACHING MACHINES, AND MISCELLANEOUS EDUCATIONAL COMMUNICATIONS MEDIA-MATERIALS. A LIST OF PARTICIPANTS CONCLUDES THE REPORT. (MS)

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educational communications convocation proceedings

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
DIVISION OF EDUCATIONAL COMMUNICATIONS
ALBANY, NEW YORK 12224

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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1964
EDUCATIONAL COMMUNICATIONS
CONVOCATION PROCEEDINGS

Proceedings of the New York State Convocation on Educational Communications

November 22 - 25, 1964

Division of Educational Communications
New York State Education Department

in cooperation with the
New York State Audio Visual Council

and

New York State Educational Radio and Television Association

The University of the State of New York
The State Education Department
Albany, 1965

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THE UNIVERSITY OF THE STATE OF NEW YORK

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George L. Hubbell, Jr., A.B., LL.B., LL.D., Litt.D., Garden City, 1966
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Everett J. Penny, B.C.S., D.C.S., White Plains, 1970
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Loran C. Twyford, Jr.

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FOREWORD

The second annual EDUCATIONAL COMMUNICATIONS CONVOCATION was held in New York City at the Americana from November 22 to 25, 1964. The meeting was jointly sponsored by the New York State Education Department's Division of Educational Communications, New York Audio Visual Council and New York State Educational Radio and Television Association.

Nearly 500 persons attended. A total of 109 research papers and demonstrations reporting the latest developments in the communications field were given. Several Education Department personnel and other specialists from the northeastern state gave presentations on a variety of topics. The highlights were talks by John Bystrom, Assistant to the Undersecretary of Health, Education and Welfare, "Exploring New Sources of Financing for the Noncommercial Media;" and Mendel Sherman, President of DAVI, "New Educational Methods and Services to Meet New Educational Challenges."

Other presentations during the Convocation are included in this summary and are categorized in the following areas: Appraisal of Media and Materials, Educational Television, Electronic Classrooms, Instructional Films, Programed Instruction and Teaching Machines, and Miscellaneous Educational Communications Media-Materials. A LIST OF PARTICIPANTS concludes the report. Not all speeches listed on the program appear in summarized form as many were of a demonstration nature. Also, some manuscripts were submitted too late to be included.

This Convocation Summary was deemed necessary and valuable as each participant could not attend all the concurrent sessions. The joint sponsorship of the meeting demonstrates the cooperation among organizations interested in the educational communications field. The two persons who planned and coordinated the Convocation are Stephen J. Feit, Lg. Island; and Loran C. Twyford, Jr., Chief of the Bureau of Classroom Communications, New York State Division of Eduaational Communications. Richard D. Hubbard, Associate in Educational Communications, edited the publication.

Communications Convocation
Albany, New York

November 22 - 25, 1964

Division of Educational Communications
New York State Education Department
in cooperation with
New York Audio-Visual Council
and
New York State Educational Radio and Television Association

Sunday
November 22

12 noon - 10:00 p.m. Albert Hall Foyer	Registration
1:00 p.m. - 2:00 p.m. Albert A	Meeting of New York State Educational Radio and Television Association
2:00 p.m. - 5:00 p.m. Albert A	NYSERTA Committee meetings
6:30 p.m. - 7:30 p.m. Georgian Ballroom A	Communications Convocation Round-up Chairman: Wendell Shields Hosts: Provided through the courtesy of our commercial friends whose names appear on Page 16
8:00 p.m. - 9:30 p.m. Georgian Ballroom B	GENERAL SESSION Chairman: Sherwin Swartout, President of New York State Audio Visual Council Introductions: Presidents of participating organizations Speaker: Harold B. Gores, President Educational Facilities Laboratories, Inc. "Improving Instruction through Better Educational Facilities"
9:30 p.m. - 11:00 p.m. Chelsea Suite	Executive meeting of New York State Audio Visual Council
9:30 p.m. - 11:00 p.m. Georgian Ballroom B	Forum on the Proposed NYSAVA Constitution Discussion leaders: Howard Abeles, Great Neck Public Schools Murray Phillips, Hofstra University

Monday
November 23

8:15 a.m. - 9:30 p.m. Registration
Albert Hall Foyer

8:50 a.m. - 10:10 a.m. CONCURRENT SESSIONS

Albert A

Room Chairman - Everett Lare, Ossining

The TV Teacher and the Producer-Director:
Their Roles on the Team
Jay Brill, Plainedge

Video Tape Recorder: Aid to CCTV
Dalton Levy, Plainedge

Albert B

Room Chairman - Charles Daly, New Rochelle

The Communications Concept: Core of a
Functional AV Program
David Guerin, Garden City

Audio Visual Implications Drawn From
Research on the Disadvantaged Child
Allen Landowne, BAVI, New York City

Albert C

Room Chairman - Jack Fruman, White Plains

Developing Administrative Teacher and Community
Interest and Support for Educational Technology
Frank T. Mathewson, AV Consultant

Programing Communications Media for Large
Group Instruction
John Romano, Plainview

Albert D

Room Chairman - John Kager, Iona College, New Rochelle

Development of "Programed" AV Instruction for
Television
Kenneth Komoski, Columbia University

Curriculum Planning for Educational Television
Bernarr Cooper, State Education Department

10:10 a.m. - 10:25 a.m. Break

Monday
November 23

10:25 a.m. - 11:45 a.m.	**CONCURRENT SESSIONS**
Albert A	Room Chairman - Sister Catherine Thomas, College of Saint Rose, Albany Teacher Training by Television Morris Freedman, Pierre Lehmuller, BAVI, New York City The Efficacy of Television in the Schools C. Fred Kelley, Channel 13, WNDT, New York City
Albert B	Room Chairman - Richard Clark, Scarsdale Where We've Been and Where We're Going in AV Albert Bailey, Bailey Films Panel on Classroom Communicator David Crossman, State Education Department Frank O'Brien, West Point Military Academy Alan Ramm, Westfield Academy, Westfield
Albert C	Room Chairman - William Saulsberry, SUNY, Fredonia Philosophy and the Media: Which Serves the Other? Frederick Brieitenfeld, NAEB, Washington Reaching the Culturally Different Child Through Audio Visual Approaches Kathryn Hearle, BAVI, New York City - Helen Hildebrandt, New York City Public Schools
Albert D	Room Chairman - Marion Neil, Mills College, New York City 2500 Megacycle Roundup Raymond Graf, State Education Department Higher Education and Inter-institutional Television Bernarr Cooper, State Education Department
12 noon - 1:50 p.m. **Royal Ballroom Suite**	LUNCHEON Chairman: Michael Collins, President New York State Educational Radio and Television Association Speaker: John Bystrom, Assistant to Under-secretary of Health, Education and Welfare "Exploring New Sources of Financing for the Noncommercial Media"

Monday
November 23

2:00 p.m. - 3:20 p.m. **CONCURRENT SESSIONS**

Albert A

Room Chairman - Sister Rose Augustine, Brentwood College, Brentwood

Two-Way Radio in the Albany Medical College Project
Albert Fredette, Albany Medical College

Issues in Educational Communications: What's in a Name?
Donald Ely, Syracuse University

Albert B

Room Chairman - Maryln Zahler, SUNY, Buffalo

Evaluation of Public School Educational Communications Programs
Richard Hubbard, State Education Department

"AV to Educational Communications: 26 Year History of Centralized AV Department"
Edward Moy, Ithaca

Albert C

Room Chairman - Arthur Cowdery, Rochester

Television Council Activities
Norbert Nathanson, State Education Department

A Look at CCTV in Centereach
Bernard Hanley, Centereach

Albert D

Room Chairman - Rose Hoffman, New Rochelle

Initiating A Regional Film Library Via Data Computer Processing
Robert Taylor, Yorktown Heights

Establishment of Regional Film Libraries
David Rees, State Education Department

3:30 p.m. - 5:00 p.m.
Albert A

MEETING OF THE NEW YORK STATE AUDIO VISUAL COUNCIL, in association with members of the Metropolitan Audio Visual Association and Long Island Audio Visual Council

4:15 p.m. - 5:30 p.m. First Tour of Lincoln Center

5:45 p.m. - 7:00 p.m. Second Tour of Lincoln Center

Monday
November 23

8:00 p.m. - 9:20 p.m. CONCURRENT SESSIONS

Albert A

Room Chairman - Robert Holliday, SUNY, New Paltz

Portable Television in Teacher Training
Hal Marder, Edward Berkowitz, BAVI, New York City

Organizing Student TV Squads
Jay Brill, Plainedge

Albert B

Room Chairman - Paul Imbrock, SUNY, Oneonta

The Technology of Film Rejuvenation
Ivan Ellis, Comprehensive Film Treat

Mobil Rear Projection: Its Benefits for Classroom, Small Groups and Individual Instruction
David Schwartz, H. Wilson Co.

Albert C

Room Chairman - Dorothy Curie, Yonkers

The Classroom Communicator and Electronic Scorer
Robert Bell, Bell Educational Laboratories

Computers in the Secondary Schools
Morton Sugarman, Automated Teaching Center

Albert D

Room Chairman - Abraham Cohen, White Plains

Problems and Progress in Closed-Circuit Video-Tape
Raymond Graf, State Education Department

Administrators Take a Look at Educational Television
Bernarr Cooper, State Education Department

9:30 p.m. - 10:50 p.m. CONCURRENT SESSIONS

Albert A

Room Chairman - Bertha Odessky, BAVI, New York City

Folk Dances Represented on Postage Stamps: A New Approach to Visual Education
Susan Braun, Dance Films (Non-profit - tax exempt organization)

Fully Integrated AV French Course for Junior High School - 25 minute color film
V.V. Kameneff, Tavor Aids

Monday
November 23

9:30 p.m. - 10:50 p.m. CONCURRENT SESSIONS (cont'd)

Albert B Room Chairman - Joseph Millman, BAVI, New York City

TelePro's Student Responder
R. Frederick Handel, TelePro Industries

New Materials in Printed AV Materials, Charts and Programed Instruction Filmstrips
Walter Stickney, Eye Gate Productions

Albert C Room Chairman - Samuel Malkin, BAVI, New York City

Demonstration of AO Trans-Lifter
Jack Britton, American Optical Co.

Tele-Lecture as a Means of Extending and Sharing Teaching Resources
Richard Deuel, New York Telephone Co.

Albert D Room Chairman - Victor Spevack, BAVI, New York City

Aid to School Television: Progress Report
Raymond Graf, State Education Department

Media and Materials Distribution Service: Video Tapes
Norbert Nathanson, State Education Department

Chelsea Suite Executive meeting of New York State Audio Visual Council

Tuesday
November 24

8:15 a.m. - 9:00 p.m. Registration
Albert Hall Foyer

8:50 a.m. - 10:10 a.m. CONCURRENT SESSIONS

Albert A
Room Chairman - Abraham Cohen, White Plains

Getting it Ready for the Printer: The Preparation of Finished Art and Copy
Wileman, Columbia University

School Public Information Publication with Emphasis on Visual Communication
James Mason, Ithaca

Albert B
Room Chairman - Rose Hoffman, New Rochelle

Multi-Media Approach to Reading
Jacqueline Smith, New Rochelle

A Rolling (mobile) Reading Classroom: The First Three Months of Use
Robert Taylor, Yerktown Heights

Albert C
Room Chairman - Dorothy Curie, Yonkers

Values of an In-Service AV Course for Teachers by the Local AV Director
Ivanelle Brown, Rockville Centre

Introducing Overhead Projection in an Elementary School Program
Arthur Cowdery, Rochester

Albert D
Room Chairman - Paul Imbrock, SUNY, Oneonta

Effective Communications Media in Secondary School English
Ruth Nelson, Hewlett, Long Island

Interage Instruction
Nina Kimball, Bethpage

10:10 a.m. - 10:25 a.m. Break

Tuesday
November 24

10:25 a.m. - 11:45 a.m. CONCURRENT SESSIONS

Albert A

Room Chairman - Robert Holliday, SUNY, New Paltz

The AV Aspects of the Reading Phase in the Foreign Language Program
Ruth Cornfield, University of Pennsylvania

Tape Development and the Language Laboratory: Research Studies with State Research Grant
Sarah Lorge, Andre Humbert, BAVI, New York City

Albert B

Room Chairman - Arthur Cowdery, Rochester

Automated Teaching Equipment in Learning
Alexander Schure, Sheldon Littwin, New York Institute of Technology

Project CUE: Cultural Enrichment Program
Robert Brown, Grace Lacy, State Education Department

Albert C

Room Chairman - Maryln Zahler, SUNY, Buffalo

Photography Innovations in the Elementary School
James Yoe, Montrose Schools, Montrose

Professional Theater and the Language Arts
Paula Silberstein, BAVI, New York City

Albert D

Room Chairman - Sister Rose Augustine, Brentwood College, Brentwood

The Audio Visual Teacher in the More Effective School: The Problems and the Approach
Armold Windgarden, New York City

Lo! the Poor Chalkboard
Herman London, Hunter College

12 noon - 1:45 p.m.
Royal Ballroom Suite

LUNCHEON
Chairman: Sherwin Swartout, President
New York State Audio Visual Council

Speaker: Mandel Sherman, President
Department of Audio Visual Instruction
National Education Association

"New Educational Methods and Services to Meet New Educational Challenges"

Tuesday
November 24

1:45 p.m. - 3:05 p.m. CONCURRENT SESSIONS

Albert A

Room Chairman - Bertha Odessky, BAVI, New York City

Developing Literacy in the Mass Media
Mayor Wagner's Film Study Seminar for Young Children
John M. Culkin, S.J., William K. Trivett, S.J.,
Fordham University

Albert B

Room Chairman - Marion Neil, Mills College, New York City

Panel - Tapes for Teaching
Moderator: Albert Solomon, State Education Department
Jerrold Sandler, National Educational Radio, NAEB, Washington
Coy Ludwig, NAEB Research Division, Washington
William King, New Jersey State Education Department

New Plans for School Building Design
David Crossman, State Education Department
Participants:
Alan Green, Rensselaer Polytechnic Institute
Morton Gassman, Rensselaer Polytechnic Institute
John Fitzgerald, State University of New York, Albany

Albert C

Room Chairman - William Saulsberry, SUNY, Fredonia

Cost of Educational Communications Programs
Paul Abramson, Editor, School Management
Robert Brown, State Education Department

Phillipsburg in Words and Pictures: A Visualized Community-School Public Relations Project
Constance Moy, Phillipsburg, New Jersey

Albert D

Room Chairman - Richard Clark, Scarsdale

Outdoor Class Experiences
Adrienne Bedelle, New Rochelle

Listening-Learning Corner in Primary Grades
Barbara Mason, New Rochelle

Tuesday
November 24

3:10 p.m. - 4:30 p.m. CONCURRENT SESSIONS

Albert A
Room Chairman - Sister Catherine Thomas, College of Saint Rose, Albany

Film for Raising the Self-image of the Disadvantaged Child
Clifford Ettinger, Herman Jacobs, BAVI, New York City

Priorities and Targets in Film Service
Henry Queen, BAVI, New York City

Albert B
Room Chairman - John Kager, Iona College, New Rochelle

Developing and Using Media Kits
Richard Hubbard, State Education Department

Developing Services for Overhead Projection
Eugene Erdos, BAVI, New York City

Albert C
Room Chairman - Jack Fruman, White Plains

The AV Program in a Small School System in Cooperation with BOCES
Jane Smith, Westfield

Customize Your Classroom Films
John Davis, Geneseo

Albert D
Room Chairman - Joseph Millman, BAVI, New York City

Curriculum Materials Center: The Philosophy
Murray Phillips, Hofstra University

Preparing Overhead Transparencies for Classroom Use
George Wiesner, State Education Department

4:30 p.m. - 5:30 p.m. GROUP MEETINGS

Albert A College and University Aduio Visual Association
Albert B BOCES Educational Communications Association (tentative)
Albert C New York State Audio Visual Dealers Association (tentative)
Chelsea Suite New York State Audio Visual Council Executive Board
Albert D Local DAVI Membership Committees Meeting - Mickey Bloodworth, DAVI, Washington, D.C.
Other groups are invited to meet during this period

5:30 p.m. - 7:30 p.m. DINNER RECESS

Tuesday
November 24

7:30 p.m. - 8:50 p.m.

Albert A

Panel Discussion I - "Use of Mass Media in Programed Instruction"

Chairmain: William F. Ryan, State Education Department
Discussants: Lincoln F. Hansen, Institute for Educational Technology
Donald Cook, Basis Systems, Incorporated
Phil Lange, Teachers College, Columbia University
Jack Deveau, Visual Programing, Inc.

Panel Discussion II - "Schools and Programed Learning"

Moderator: Henry M. Brickell, Educational Testing Service, Manhasset, Long Island
Special Topic - "Administrative Imposition of Programed Learning Materials on Non-Sympathetic Teachers"
Discussants: Richard Jarvis, Nanuet, New York
"Commercial Guidance with Programed Materials"
George Fernandez, New Paltz, New York
"Teacher Training for Programing Materials"
Marjorie Lehman, Rochester, New York
"New York State Supported Research in Programed Learning"

Albert B

Room Chairman - Samuel Malkin, BAVI, New York City

A Technique for Developing Local Audio Visual Presentations
Roger Hall, Boy Scouts of America

Staff Utilization, Technology and the Harkness Center
Ira Singer, Erie County

Albert C.

Room Chairman - Victor Spevack, BAVI, New York City

Modern Language AV Research Project
David Crossman, State Education Department

State Plans for Evaluating Instructional Films
Albert Solomon, State Education Department

Albert D

Room Chairman - Charles Daly, College of New Rochelle

The Anatomy of a Graphics Center for Local Production
George Wiesner, State Education Department

Planning a Regional Communications Center
Jack Tanzman, Plainview

Tuesday
November 24

9:00 p.m. - 10:20 p.m.	**CONCURRENT SESSIONS**
Albert A	**Room Chairman - Everett Lare, Ossining** **Improvement of Overhead Projector Utilization in the Classroom** **Bennett Schultz, Aaron Bisberg, Technifax Corp.**
Albert B	**Room Chairman - Helen Klug, BAVI, New York City** **Integrated AV Systems** **Bob Love, Edex Teaching Systems** **Student Intercommunication System** **James Mcguire, Advanced Educational Systems, Inc.**
Albert C	**Room Chairman - David Crossman, State Education Department** **Initiating a Regional Film Library Via Data Processing** **Daniel Vittelo, North Westchester BOCES #1** **Use of Projectors and Microscopes for Improvement of Instruction** **Harold Levitt, Hudson Photographic Industries, Irvington-on-Hudson**
Albert D	**Room Chairman - David Rees, State Education Department** **"The Freeport Story"** **John Martin, Mt. Vernon Public Schools**

Wednesday
November 25

8:30 a.m. - 12 noon — Registration
Albert Hall Foyer

9:00 a.m. - 10:20 a.m. — CONCURRENT SESSIONS

Albert A — Room Chairman - Everett Lare, Ossining

Educational Communications for Potential Teachers in New York State
Sherwin Swartout, Brockport State University College

Activities and Functions of Audio Visual Personnel as Related to Teacher Education
Desmond Wedberg, Team Project, American Association of Colleges for Teacher Education, Washington, D.C.

Albert B — Room Chairman - Richard Clark, Scarsdale

New Federal Legislation
Don White, National Audio Visual Association

Certification of Educational Communications Personnel
Loran Twyford, State Education Department

10:40 a.m. - 12 noon — CONCURRENT SESSIONS

Albert A — Room Chairman - William Saulsberry, SUNY, Fredonia

New Systems for Education Suggested by Operations Research
Eugene Oxhandler, Syracuse University

Building Coordinator Yesterday: Audio Visual Teacher Today
Edward Bernard, BAVI, New York City

Albert B — Room Chairman - Arthur Cowdery, Rochester

Survery of the Status of Educational Communications in the State
Loran Twyford, State Education Department

New Educational Communications Equipment on State Contract
David Rees, State Education Department

Communications Convocation Committees

Program Committee
Co-chairmen: Loran Twyford, State Education Department
Steven Feit, Valley Stream
Member: Catherine Bailey, Troy

Registration Committee
Chairman: Robert Taylor, Yorktown Heights

Equipment and Graphics Committee
Chairman: Edward Golub, BAVI, New York City
Member: Vic Singer, BAVI, New York City

Local Planning Committee
Co-Chairmen: Edward Bernard, BAVI, New York City
Morris Freedman, BAVI, New York City

Meeting Rooms Committee
Chairman: Sanford Levine, Bronxville

Hospitality
Co-chairmen: Marion Neal, Mills College
Rose Hoffman, New Rochelle
Member: Paula Silberstein, BAVI, New York City

Industry Participation Committee
Co-chairman: Steven Feit, Valley Stream
Members: Peter Greenleaf, BAVI, New York City
Wendell Shields, Coronet

Non-school AV Organizations Committee
Chairman: Norman Siegel, N.Y. City Dept. of Health

Publicity Committee
Chairman: Lou Kleinman, WNYE, Board of Education, New York City

Luncheons Committee
Co-chairmen: Stephen Feit, Valley Stream
Toni Gregg, Broome Technical Community College

The Communications Convocation Roundup was made possible with the collaboration of the following audio visual suppliers of equipment and materials:

Association Films, Inc.	New York, New York
Audio-Visual Supply Corp., Strawberry Hill	Stamford, Connecticut
Bailey Films, Inc.	Hollywood, California
Charles Beseler Company Projection Optics Company	East Orange, New Jersey
Stanley Bowmar Co., Inc.	Valhalla, New York
Carousel Films Inc.	New York, New York
Coronet Films	Chicago, Illinois
Churchill Films, Inc.	Los Angeles, California
Encyclopaedia Britannica Films	Wilmette, Illinois
Eye Gate Productions	Jamaica, New York
Film Associates of California	Los Angeles, California
Hudson Photographic Industry	Irvington-on-Hudson, New York
Modern Talking Picture Service, Inc.	New York, New York
Neumade Products Corp.	New York, New York
Radio Corporation of America Audio-Visual Products	Camden, New Jersey
RCA Service Company Educational Television Department	Camden, New Jersey
Robert Disraeli Films	New York, New York
Society for Visual Education	Chicago, Illinois
Sterling Movies, U.S.A.	New York, New York
Teaching Film Custodians	New York, New York
United Transparencies, Inc.	Binghamton, New York
United World Films	New York, New York
Walt Disney 16 mm Films	Teaneck, New Jersey
Weston Woods	Weston, Connecticut
H. Wilson Corporation	Chicago, Illinois

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overview

NEW EDUCATIONAL METHODS AND SERVICES TO MEET NEW EDUCATIONAL CHALLENGES

Mendel Sherman, President, DAVI

The topic of this discussion is how to meet new educational challenges with modern resources.

I would like to talk briefly about the educational challenges which face us today. They have been with us some time and I am sure you're all familiar with them. One of them, of course, is the tremendous increase in the school population. In a period of a very short time, since 1959, when we had in all our schools a total of about 40,000,000 students, we are going to have about 12,000,000 more students than we had in 1959.

The increase alone is not so frightening, but we are going to have a teacher shortage with that which has been estimated from 100,000 up to 250,000. If you look at the 250,000 figure, you know they are thinking about the shortage in types of teachers which we are going to have in the classroom. Who is going to teach the students who want to take Physics? If each one of these Physics teachers teachs in this one state, we would like to think that all of them had a Masters Degree in science, but if we eliminated all those who do not have a masters degree, we would have only 50% left. Of course, if we said we want them to have a Masters Degree in science, only one out of every 10 teachers teaching Physics is really qualified to teach.

Another problem is the population explosion and the shortage of teachers when it comes to foreign language. The situation has improved in the last two years, but three years ago if we had eliminated all schools which did not teach at least one foreign language, it would have included about 35%.

Another challenge that faces us is explosion of knowledge. If we would estimate the increase in knowledge from dawn of history until 1900, we would say it had about doubled between 1900 and 1963. Between 1963 and 2000, it will probably double again. As a matter of fact, between the time we reach the year 2000, we will be getting as much new knowledge in one year as we would from the dawn of history until the year 1900 and some of this new knowledge is coming in a new way.

Leonard Selks, in his book, The Revolution, talks about 3 stages in the discovery of knowledge. First of all, the lone inventor, such as Edison, working in an attic. He is to some people rather queer, strange, and just some nut working in curious ways. We did not gain a great deal of knowledge that way, but it is very important knowledge. Then along about the time of the Manhattan Project, we took a problem and put a team of scientists on it, and said, "Find a solution. We need the Atomic Bomb invented." The third stage which probably is only a few decades old, is where people are discovering knowledge on purpose. That is, if we have our research and development, we have scientists who are just doing basic research and are not thinking of solving any problem. They are there to make present knowledge obsolete. I believe Leonard Selks called them "creative destructors." They are destroying knowledge as fast as they can by finding something better, just in the way of pure research. These are some of the problems, some of the challenges, but there is another one which I think we in the communications field have to watch, and that is some of these change emphases in education as identified by Ollie Sands in a committee working through the NEA. They say there has been a change in emphasis and one of them is a change from the group to the individual. I don't think there has really been a change, there only has been increased attention given to the individual, I cannot believe there will be a sudden shift from teaching large groups. It was pointed out that there is great importance in the education of the individual not in large group settings. There has been a change in emphasis from pure memory where we pile the youngsters full of facts to a situation where the pupil inquires. He uses the inquiry method.

There has been a change in attention from the graded school to the flexible or non-graded school. There is an amazing number springing up all over. This represents a change from the self-contained classroom to the self-contained school; from rigidly scheduled classes to flexible scheduling with appointments of independent learning; from the teacher as a general practitioner to the teacher as a member of a team; and from the school planned for agrarian needs of 9 months a year to one of 12 months planned to meet the needs of an urban society and all age groups. These are just some of the challenges that face us, and you can see just by this list what this is going to mean to us both as to the tools we're using, and to our procedures.

Twelve years ago, any teacher faced with an educational problem had quite an array of audiovisual tools from which to select to help solve teaching problems. However, there was little or no ETV. Then, too, some other media have undergone some changes. The tape recorder, for example, at about this time was thought of mostly for group instruction, but now what have we done to it. It is being used for individual study both for recording and for listening. With a few mechanical innovations, we have it for group learning. The tape recorder can be adapted very easily for both group and individual study. In recent years, we have made attempts at acoustical isolation by means of earphones. Consequently, any classroom can become a language laboratory or what's now being termed an electronic learning laboratory because more than language is being studied.

Today there are between 90 and 100 educational television stations in the country with between 13 and 14 million children getting some of their education via this means. Besides open circuit television, we also have the closed circuit for magnification in the room. We have a specially designed tabletop with the monitor. It can be used for magnification within the room, or for several rooms. Video tape recorders came way down in price. A few years ago, you would have had to pay $60,000 for one; now, you can get one for only $10,000. The Fairchild recorder is one that some AV specialists believe is going to revolutionize video recording and its use when it comes out in another 18 months or so. It may cost as low as $500. If it does, present scheduling problems as represented in the IMPATI program can be met. With these tape recorders in each school, you can see that the IMPATI plane could fly at night and the recorders could record what they needed, and the next day play it back.

Another development is the computer. This device can store and retrieve information and give it back to us in all kinds of combinations. There are several places that are working with it. You heard some persons yesterday talk to the point of taking what is in about 20 books, and record it. All that information on one small role of plastic film. Don Bushnell, (you've probably read his article in AVCR on the computer-based classroom) explained what the lessons would be and how they work. He gives a little instruction on the responder unit for his pupil, and from then on, he is on her own. Information is presented on the instrument in the center, and he responds to the one on the left. Anytime he wishes he can get a complete readout from any of the students to find out what they're all doing on any one question.

The instructor is the manager of the learning situation at all times and gives the student help in getting his materials ready including the usual types of books, maps and globes. The listening corner can be used as an integral part of individual learning. The filmstrips which originally had been thought of as a mass device now can be made available to individual students right in the resource center.

The 8mm motion picture is bringing motion and sound right to the individual student. With the rear vision mirror, there can be a place where several students can watch simultaneously. As soon as 8mm sound gets to the place where the machines will be a little less expensive and where more material will be available, this can revolutionize bringing single concept information right to the individual or small student groups.

Teaching machines can solve some of our problems. After the larger more expensive machines came a number of cheaper machines and finally the programed book. As far as research indicates, there is no difference in the machine and the programed book.

Then there is the instructional materials center for teachers, where teachers can go and find any types of equipment they need, where they can make some of their materials, and where they can go through and pick up the materials and actually examine them. You may take the materials with you or have them sent right to the school. Several places are now trying this new approach. An entire course in French is sent to a school - one film after another, with related materials coming in as needed.

Now from the individual to the group. This means of instruction is growing and will continue to develop. When I went to the University of Wisconsin, I saw their telemation center, the multi-screen projection presentation technique. It takes hours to prepare one lecture - anywhere from 50 to 500 - but this lesson can be repeated for a number of classes in semester after semester, for several years. The instructor can stay at the lecturn while at the back of the screen. There are several means of projection. He can read his prepared script at the lecturn, have it recorded on magnetic tape with high frequency sounds added which will advance the equipment as needed when the speech is replayed. Instructors are very happy with this and they can use a certain lecture repeatedly while it was completely under their control, and it gave them a great deal of time to improve other lessons. Students reactions were very enthusiastic about this type of presentation. The foregoing are just some of the tools which are part and parcel of our field. It was common not too long ago to answer the question, "What is AV?" by a list. These tools are as important to us as the physicians' tools are to him. But if you ask the physician what his profession is he doesn't answer by listing the electronic microscope, the cardiograph, penicillin, etc. The tools are one of the distinguishing characteristics of our field, a very important one, but it doesn't define our field. We are concerned basically of course, with developing human potential. And that is our great challenge. That is a challenge that underlines population explosion and everything else. Because the human mind represents the greatest resource that we have. These people with their possible talents will not come this way again, and we have the means to cope with this challenge, but it takes people to do it.

People are our big concern. At a recent meeting down in Austin, Texas, concerned with problems facing DAVI, 6 of 9 concerns which we discussed at length dealt with people. With Manpower, where are we going to recruit the people, we are going to have to train them. Where are they going to get the experiences? Really, how do we update ourselves? We may not be obsolete, but some of the things that we are doing are obsolete.

We are now pretty excited about Title XI which DAVI and quite a few others helped get through Congress recently. It will make available this year about $20,000,000 and about $32,000,000 the next and the next for the establishment of educational institutes for media people. This can be one of the greatest things of this decade affecting our field.

How are people going to get this help? Who is the group that is going to help the teachers in the colleges and the teachers in the schools, to make successful use of these tools? No question about it. We have to be the group. We may feel ourselves not always adequate to meet the problems, but we are the ones who have to do it. I know all of us feel this great responsibility. When I say we are the group, I can't help but think of DAVI and of different people who make up the group. When we think of the specializations within DAVI, we see that there are AV specialists, librarians, people in production, museum workers, and all the technicians who are so necessary in television, programed learning, language labs; many other resources. We have specialities in different fields because people in large metropolitan areas have different problems than those in smaller systems. People running individual schools, have slightly different problems than ones in colleges and universities. Then as we think of more specialists, such as administration, professional education, research, communications theory, and curriculum. One goal of all is increased learning efficiency and the development of human potential.

THE COMMUNICATIONS CONCEPT:
CORE OF A FUNCTIONAL A-V PROGRAM

David V. Guerin, Garden City

We are here today attending a great gathering known as the Communications Convocation...only the second of its kind. Last year, at its inaugural meeting 400 persons attended and some 82 research papers and demonstrations reporting the latest developments in the communications area were given. This year the total attendance promises to run over 750 and by quick count there are at least 92 presentations on the program dealing with the latest developments in instructional materials, media, and methods. I rejoice in the great good, actual or potential, that all of this holds for the advancement of education. But I think that the greatest thing to happen to A-V in our lifetime is that which is present here only by implication. Perhaps this is because we feel it needs no explication, no singling out, because it is so fundamental, so self-evident; I refer to the communications concept. It is certainly here in the title of the Convocation. But we could have called this gathering by another title and it would most likely be much the same. My belief is that the communications concept does need to be singled out, spotlighted, brought to the conscious level over and over again for it is not only a coherent and profound concept which we, as interested professionals, find intellectually satisfying (which was made abundantly clear by the reaction given Berlo's presentation of it to the DAVI Convention in Denver). But, it just so happens, that it is eminently practical and extremely clear and understandable to all those with whom we must deal...administrators, teachers, parents, and students (even business administrators). It is our key tool concept. It is the useful unifying concept we have been needing...to justify and explain our work and our requirements and to place them in a proper perspective. It is effective because it is readily comprehensible; no one has any difficulty with the communications analogy of coding (sending) and decoding (receiving) and of the fact that you do this in a certain cultural context. Everyone quickly grasps the idea that words are arbitrary symbols commonly agreed upon...that they have no inherent meaning but only given meanings and that the receiver's meaning for the symbol is that which he assigns out of his own experience. It is then simple for anyone to understand that language is symbology...a vast collection of symbols that "stand for" some reality or for some abstraction from reality. There ensues no difficulty in accepting the idea that pictorial symbols are none-the-less symbols since they too "stand for" some reality, and stand in the same functional relationship as words.

However, since the pictorial symbol more directly "stands for" or represents the thing symbolized there is less chance for ambiquity, more certainty as to the meaning it will evoke (i.e. the better the chance that the sender and the receiver will attach the same meaning to it).

The point is easily grasped that audiovisual materials are not aids to language; they are language.

A specialist in language might argue that a picture is "representational" and a word is "symbolical" but the difference is essentially one of degrees of abstraction. The point is that they are all part of language, or that system by which we deal with things through symbols which stand for them.

Once this concept is grasped, once it is accepted, then we are on the solid and firm ground we have always been entitled to; the same functional ground as text books. The service we provide is at the heart of the educational process; for what is teaching but the facilitation of communication. We are not dealing in some fringe function but with the essence of the teaching/learning process. We are extending the concept of language to its full dimension.

The implications are enormous, yet reasonable. The concept has tremendous depths, bringing, as it does, into one framework such things as perception, the thinking process, the nature of verification, acculturation and all other processes concerned with learning. There are implications for professional preparation, curriculum planning, school design, instructional materials centers, production centers, etc. etc. The art of teaching can be said to be the art of arranging a syllabus, of selecting terminology, materials, imagery and experiences that will enable the student to acquire knowledge, understanding and meaning. This refers broadly to a total communications effort. The professional preparation of the teacher, by implication, must involve all subjects which bear on the communication process (e.g. English, psychology, sociology, history and even anthropology). His curriculum planning will, for example, be strengthened by a full awareness of the need for common experiences in order to ascribe common meanings. The instructional materials center in its role as a communications facilitator must quite naturally be a source of all kinds of media--book and non-book. And, since the art of teaching becomes that much more of an art when the teacher is in a position literally to create his own symbology, the production center falls suddenly into its proper place in the scheme of things.

The unifying effect of the communications concept is, as I have said earlier, not only satisfying intellectually but is of very practical value. I would not be so much impressed with the concept were it not actually so useful in my work. It is plain that if people are sold on the concept they will be thinking as you do and will be more likely to give your program the solid detailed support it needs and deserves. My real message is that I have tried this approach and it has worked. I probably should add that I have the advantage of a deep conviction about communication which springs from the fact that both my mother and father were deaf mutes. However, it is the truth of this concept, the real correspondence of its theoretical structure to reality, its "operational truths," that make it work and it should therefore be of practical value to all or most of us.

Permit me to draw a picture of it at work in Garden City as a case in point. I would like to share my experiences with you in the hope that you too will find the concept truly useful.

For the purposes of continuity and brevity, I will highlight the positive aspects of the program, but as you will know from your own experience, there are always setbacks and compromises along the way. One thing is certain:

any real success we achieve involves a lot of doing on our part. We cannot appeal only to one echelon of the school system. We cannot hope for success without personally working to present and implement the concept throughout the staff structure.

The fact that the concept is clear is not enough. This does not necessarily mean it will be used. We have to work within existing situations and to seize opportunities to be helpful in a communications way as regular ongoing needs arise. Most important of all, we must recognize that concepts tend to be competitive. We must avoid placing our program in a competitive context (e.g., book vs. non-book materials) particularly since it is not necessary. One of the greatest virtues of the communication concept is that it embraces all materials.

The program at Garden City began with a statement of the role of the instructional materials coordinator as he conceived it:

> "Good teaching is equated with good communication. The role of the instructional materials coordinator is the role of communications spetialist and he must be thoroughly aware of the problems of communication.
>
> He is not a purveyor or promoter of gadgets but a resource person who, upon the invitation of the teacher, will join him in examining subject matter areas that present special difficulty to the learner. They are examined as problems in communication. It is important that the focus be on the problem and not on the stockpile of visual aids available. The solution may be in creating new materials or it may be outside audiovisual offerings altogether."

* * * *

Shortly after his arrival he asks if he can give a presentation to the Board of Education. He speaks to them about the communications concept as follows:

> "Gentlemen:
>
> I begin my presentation this evening with two fundamental questions appropriate to this group:
>
> 1. What is the function of education?
> 2. What is teaching?
>
> There have been many answers given to these questions and they are by no means in agreement. But there is one answer on which I think we can all agree: the function of education; the function of teaching is communication.
>
> It behooves us in education, therefore, to be conscious of the communication process. Although we may be more or less knowledgeable about it (after all we engage in it constantly) and although there is no reason why, with a little thought, observation and introspection,

we cannot bring its elements to the conscious level - we rarely do. We are usually far too busy attempting to communicate to examine or think about the process.

But when we do, we recognize that there are problems of communication. We recognize that there is a sender and a receiver, that the sender encodes, and the receiver decodes - that the code is in the form of arbitrary symbols commonly agreed upon and that this code is called language.

We are aware that in the transmission of the symbols there are all kinds of interference or "noise" or uncertainties introduced such as:

1. Accoustic uncertainties of accent and articulation
2. Physical uncertainties of poor print or poor handwriting
3. Language uncertainties such as uncertainties of grammatical construction, and
4. Environmental uncertainties such as street noises or poor lighting.

This is not to mention such monumental distortions as are introduced by the filter of biases and prejudices through which the signal or symbol must pass.

Above all we are aware, upon contemplation, that the meaning which the sender or encoder attaches to a symbol is the result of all of his personal history up to the moment in time when he dispatches the symbol--and, that, likewise, the interpretation or meaning attached by the decoder is the result of his personal history up to that moment. This then leads to the hard conclusion that since no two persons have identical histories that one-to-one communication is literally impossible. And, suddenly the scope of the problem is laid bare.

But we do communicate. We manage - yes, we manage to the extent that the symbols we use are commonly agreed upon. And we do many things to help them - such as through the use of gestures and facial expressions which have a wide spread commonality of meaning - and through the assistance of intonation, inflection, stress and emphasis which are also widely understood as to their significance - and we have recognized that language symbols include all means of representing the thing signified including pictorial symbols.

We have come to know that the sender does not fill a symbol bucket with meaning and then see that it is conveyed to the receiver who then takes the senders' meaning unto himself as some kind of discrete entity which has been transmitted to him whole. We know, instead, that the sender merely puts forth the symbol and the receiver must bring his meaning to it. He must fill it with meaning from within himself. It is in reality an empty bucket...and there are tremendous implications in that for teaching.

It works successfully to the extent that the symbol happens to be common to both sender and receiver and thus to evoke common meanings. Beyond this there is also the vast store of habits which each one of us possesses, the imprints of all of our past experiences. With this we can hear snatches of speech and see vague gestures and grimaces. From such thin shreds of evidence we are able to make pretty good inductive guesses.

There are many symbols and they are all useful and necessary. And because of the difficulties naturally inherent in the communication process it behooves us to employ all the weapons we can from the symbol arsenal.

Pictorial symbols form a large part of this arsenal of language. They too are symbols except that they have the advantage of more directly representing the thing signified and therefore more likely to evoke common meanings.

That is why the instructional materials center concept is such an important concept. I am delighted that the Garden City Public Schools have recognized that book and non-book materials are both a part of language, and together provide a so much more complete resource for the learner and the teacher.

It is extremely effective to have information available in many forms or, to say it another way, to have information expressed in all manner of communicative symbols. It is even more effective to be able to create them expressly to meet specific communication needs in the classroom. I am happy to see that we in Garden City have also made, at least, a start in that direction.

I would like to spend the remainder of my time in showing you examples of pictorial language and how in combination with spoken and written symbols the teacher is assisted in her role as a facilitator of communication. Here is perhaps the most flexible communications tool to appear on the educational scene since the blackboard. It is a device with which the teacher works creatively. She cannot sit back and let it work for her...the overhead projector." (A broad sampling of overhead projectuals was then presented)

* * * *

Next an NDEA white paper was prepared detailing a centralized and decentralized projection/production system presented as follows:

"The production/projection combination places us in the best possible position to provide instructional materials that will precisely meet our specific teaching requirements. It is a practical and efficient approach because it focuses our expenditures directly on target.

Furthermore, it helps me in my capacity as an educational materials specialist to render the best possible service to the teacher. Viewing the teaching task as a task in communication, the teacher and I can sit down together - decide what materials or techniques are needed, with the knowledge that it is within our ability to meet the problem creatively with respect to materials of all kinds whether they are presently available or not.

With all of the foregoing in mind, I proposed that we utilize our fiscal year 1964-1965 NDEA entitlement to purchase a foundation set of production and utilization equipment for the overhead projector (plus a limited amount of commercially prepared materials to help us get started). Any remaining funds would be utilized to meet requirements for other audiovisual equipment and materials needed throughout the district."

The proposal was approved.

The NDEA Title III approvals for the production equipment and materials were based on the same communications plan proposed to the Board. The application was approved with only very minor disallowances.

Meanwhile presentations similar to that made to the Board were given at faculty meetings in each school.

Next, to insure that the projection/production system would be translated into reality and actually result in more effective teaching a curriculum materials production project, to be carried out in the summer, was proposed. It would be based on a precedent set by curriculum guide development projects in which the participating teachers were paid $25. per day. It was pointed out that although the district would benefit by the creation of cutom-made visuals unobtainable in the commercial market that the greatest virtue in the project would be that it would provide a vehicle or framework in which teachers would be impelled to take a close look at their teaching and give them the opportunity to be creative about it. Each of the five participating teachers (the project was a pilot project limited to the Junior High School) would be assigned a department or two to work with in determining visualization needs. They would identify specific points at which students have difficulty. The teachers would try to recall what symbology was used in dealing with the given concept or ideas and then to try to arrive at symbology that might communicate better. The project was approved. The production team of five teachers turned out 700 visuals of which 350 were first copies.

The concept underlying this project as well as the work of the project were reported on by the participating teachers to the Board of Education (thus completing the circle) to the Junior High School faculty and to a district-wide group of teachers participating in an in-service workshop on the production and use of instructional materials. An outgrowth of the project was the establishment at the Junior High School of a graphic arts production center and a graphic arts squad, the squad being sponsored by two of the participating teachers (incidentally they both joined the Long Island Audiovisual Council).

An in-service workshop serves quite naturally as another vehicle for emphasizing the communications concept. Each teacher participating in the workshop is required to do for his own classroom teaching what was done in the summer project. Again it calls for a searching examination of the places where students have difficulty and a hard look at the symbology used and what other symbology might be more effective. The workshop is now in progress and there is no question about acceptance by the teachers of this way of examining their teaching.

But there is more to communication than pictorial symbology. Communication is achieved in many ways. It is a combination of things. It is a syllabus. It is a curriculum. We are not full-fledged communication specialists until we are able to help build a whole communications package. The next proposal was that we write a new course designed to improve the written and oral expression of our high school seniors. It is a well recognized, disquieting and often discouraging fact that, by and large, despite strenuous efforts to cope with the problem, the quality of written and oral expression of our nation's students is generally poor.

The hypothesis was advanced that students don't write well because they don't think well and that what was needed was a direct emphasis on critical thinking, on logic, on the nature of verification and truth, on perception, organization and analysis which would be directly associated with writing and speaking in one combined team-taught course - with all these elements held together by a concept through which they can all be associated: the communications concept.

This project too was approved and the Instructional Materials Coordinator joined the English Department of the Senior High School in designing the course. It is now, being taught.

And so the program goes on. Every opportunity is taken to spread the word whether it be an article for the "Garden City Teacher," a talk to the PTA, a meeting of the administrative council or any other group interested in the continued improvement of instruction. The most recent development has been approval for the enlargement of the Senior High School library to include a production area, a special viewing and listening area and "wet" and "dry" carrels. It was justified in terms of the instructional materials center concept (i.e. communications concept).

They say that one of the best criteria of success is to find your terms coming back to you. Well - after a year at it - a sign showed itself. The other day the Superintendent was heard to say, "Dave, for a communications specialist you don't communicate very well." Like I said, it works.

PHILOSOPHY AND THE MEDIA: WHICH SERVES THE OTHER?

Frederick Breitenfeld, Jr., NAEB (Washington)

Conflicts between schools of education and the more classic academic departments are not new. Comments abound on the frivolity of methods courses and the doubletalk to be found in the educationist's lexicon, but on the other hand there is no shortage of statements on how teaching must not be considered merely from the point of view of one discipline, and how "Methods of Teaching" is therefore a key course for prospective public school educators. The battle is recognized on campuses across the country, and it will undoubtedly be waged for years to come. Unfortunately, within the educators' hideout itself there seems to exist a separate and different argument. It is between the educational philosophers and the specialists in what are called "educational media."

The time has long since passed for educators concerned primarily with audiovisual techniques to huddle in their professional corner, pointing accusing fingers at other educators who do not share their "AV" specialty, their abstruse jargon or their beliefs. Those who call themselves educational philosophers are also overdue in showing friendliness and respect for people in audiovisual work, instead of what usually ranges from contempt to condescension. The rift between these two factions extends from the seminar rooms at universities to the faculty lounges in public schools, and ultimately the weight of this burdensome squabble is borne by students in classrooms.

Caricatures of typical contenders are not difficult to picture. In most institutions the "AV" man is the product of a school of education. He has majored for four or five years in "Audiovisual Education," and now he is a practitioner. Sadly, however, he finds himself a custodian, a clerk, a guardian of equipment, a technician who is called upon only to thread projectors or focus lenses. In retaliation, the AV man hurries to meet with others of his kind. Together they compare notes on the ways in which they are being mistreated; they spew forth terms that tattoo them as "media" people, such as frames, carousels, performance acceptors, memory capabilites, story-boards; they claim to be at the very leading edge of education, either not recognized or misunderstood by the simple-minded in educational management.

At the same institutions, the philosophers, often trained in "Educational Administration" or "Societal Foundations," insist that it is they who deal with the very basic issues in education. Seeing themselves as the wise men of the educational tribe, they take pride in their rhetoric--their ability to win virtually all arguments through what appears to be sheer brilliance, but what in many cases is merely sophistry and forensic dexterity. By the very use of the word "philosophy," uttered in a supercilious tone, they try to terrorize most comers, and when their particular brand of intellectual bullying takes place in print or in public, the result is a disgrace.

The philosopher feels that the audiovisual specialist is nothing more than a toy-oriented mechanic; the media man calls the philosopher a reactionary theoretician living in an ivory tower. Also, since the philosopher does possess a modicum of academic respectability and since the media man does offer expertise in modern educational communication, each is basically a little frightened of the other. The question does not hinge on which of these came first, but whether there is a real relationship between philosophy and the collection of media, and whether one serves the other in the educational context. A link between the two may be discernible from philosophy's end of the battlefield.

Originally, philosophy meant love of wisdom or knowledge. Later, it was defined as the theory or investigation of the nature of reality and the laws that govern the universe. Today, in most discussions, the word refers simply to a set of principles or beliefs that underlie a specific field or endeavor. The aura of mystery sometimes surrounding the word is usually caused by the confusion of these last two meanings. If a philosopher is dealing with epistemology, metaphysics or logic, then we must understand that his definition of philosophy is classic. If, on the other hand, an educator refers to Experimentalism or Cultural Conservatism, then he is concerned with sets of principles. Philosophy in education is generally the study of collections of beliefs attributed to specific scholars, or it is the development of similar collections.

The prostitution of the word has been carried to disturbing ends. It is not strange, in some circles, to talk about a philosophy of education, then a philosophy of educational administration, followed by a philosophy of educational administration at the secondary level, and finally a philosophy of the educational administration of the mathematics program at Scottsdale High School. This is clearly a step toward the ultimate slaughter of a perfectly good word. Regardless, within this semantic struggle for status, it must be concluded that in modern education the word philosophy refers to a series of fundamental principles, and that an educational agency should at least be able to state the principles by which it tries to abide at all times.

This, at first glance, appears to be an obvious and tidy scheme for the intelligent management of an educational program, and so it is, though it is not always followed: state the philosophy (i.e., list the principles that are considered paramount), develop goals that must be achieved in order to uphold the philosophy, and then take appropriate tactical action to achieve the goals. The reasoning here is deductive--from the general or universal statement of philosophy a specific happening has been deduced. Unfortunately, this is not a well traveled route.

Inductive reasoning is that by which a scientist can progress from a single phenomenon (an apple falling to the ground), to a general principle (the idea of gravitational force). Induction has a place in areas of education, but too often it seems that the very philosophic bases of an educational enterprise are arrived at after the fact, by some sort of subconscious induction. For instance, consider an educational agency caught up in the magic of language laboratories. Separate carrels for students, individual earphones, a monstrous computer-directed playback operation and a glass control booth all seem somehow desirable. Starting with the idea of a language laboratory, or maybe even the installation itself, arguments are developed as necessary to convince doubters that the equipment is needed and that the laboratory is a wonderful educational tool. Any philosophic cogitation that does take place only comes about in defending a particular course of action. Here is a "down-only" staircase from generalities to specifics being ascended backwards. There is no deductive reasoning here, and only coincidence can turn the collection of wires, tapes, transistors and buttons into an effective teaching device. Now and then, in fact, some institutions need the assistance of outside consultants to help in deciding "what to do" with expensive equipment that has already been purchased. Often, there seems to be no philosophic substance whatsoever behind an educational project, except the tacit understanding that "it is educational and therefore it is good." Statements of principles are only developed--awkwardly, by the backwards stair-climbing method--when demanded. Under these conditions, philosophy clearly does not serve the media indeed, the two appear to be almost incompatible.

Thus, when we start with the word "philosophy" and try to find a link between what it connotes and the media, no real bond is apparent. Perhaps a relationship is more visible from the point of view of the media themselves.

It is likely that very soon after men learned to communicate with one another, individual teaching-learning situations were common. Undoubtedly, a lot of explanation took place among humans, though I suspect that the need for more was as profound as it is today. Nevertheless, it is difficult to imagine even the most primitive lesson taking place without referral to, or use of, what we now call a "medium" of education. Perhaps it was a pantomime, as one cave dweller described to another the process of making a fire or killing an animal; possibly a crude diagram was scratched in the sand as a man explained what he knew of local geography to his son; maybe a witch doctor used symbolic dolls or carved pieces of wood in making his concepts understandable. The point is that educational communication is not new, and neither are audiovisual aids.

The fifteenth century saw the development of movable type, and the idea of the printed page, over a period of years, became common. This "medium of educational communication," the printed page, remains at the top of the list, though we may well be ignoring its value and importance as we concern ourselves solely with more technical implements. Two hundred years later, Comenius printed an illustrated textbook, because he felt that children should be treated to something more than a procession of abstractions. His Orbis Pictus was quite popular, apparently, and pictures in formal education came into being. It was another two hundred years, at least in this country, before blackboards, slates and maps were added to classrooms. Here, then were the basic educational media: a teacher's voice, a few books, a blackboard, some maps. These were probably accepted in the schools with a minimum of fuss, undoubtedly because there was no strong educational establishment to reject them as unimportant gadgets and toys. It would be interesting to look at the dissertations of the day, if their reported findings were comparable to those of today: "Seventy-three percent of the students in Grammar III who used slates and looked at blackboards did as well or better than those students taught by conventional methods."

At the present time, the very number of communicative techniques appropriate to the classroom is staggering. In our century of knowledge explosion we have developed hundreds of teaching ideas and aids, some to alleviate what appears to be a shortage of teachers, others to make complex subjects simpler. We have even created a new field for professional educators: educational communications.

What does this new professional do? What must he be in order to be effective? What are his concerns?

Mainly, he struggles to keep up to date on new ideas and machinery in education; he must know the values and limitations of high-speed computing; he is familiar with programed instruction and he is able to coordinate the development of a specific program; he is called upon to design electronic instructional centers, television studios, laboratories and even buildings; his background in educational psychology is impressive; his knowledge of experimental statistics is more than adequate; he is almost an expert in theories of learning. This new professional in the world of education is an intellectual powerhouse.

Even assuming that there exists an educator with these generous qualifications, why is it that he must spend a portion of his time defending himself, insisting that he is a deserving member of the educational community? Why is he looked upon often as someone less than completely reputable? Perhaps it is because even the educator described here is basically a technician, and his concerns are usually immensely practical. Since the client wants a language laboratory, he designs one, assuming that the philosophic tenets behind the project are sound. Repeatedly, of course, they are not. But the AV man has no definable philosophy. The field of communications is simply too big to house only one standard set of principles; there cannot be a single and definable "philosophy of audiovisual education." It is this lack that marks the AV man as a technician. Perhaps he doesn't like the role, but he fights it by burying himself even more deeply in the machinery instead of by offering his clients first a philosophic statement applicable to the problem at hand (and such a statement, in many cases, is sorely needed), and then suggestions or designs for systems.

Again, neither philosophy nor the field of communications is served by the other, apparently, and the distance between the two is unfortunately great. No evident and constant relationship seems to exist.

For each item in an educational structure, someone must consider a two-pronged question: whom are we trying to educate, and for what? A satisfactory answer is the first step toward many other questions and ultimately some guiding principles for the project. Long after that it is appropriate to begin discussions about media, communicative belts and audiovisual aids. While firm philosophic footing is necessary with each new project, we cannot approach all situations with the same concocted list of beliefs if we expect to keep both the list and our integrity intact. Dewey's ideas of experimentation and "learning by doing" are applicable under some circumstances, but the classical realism of Plato is better for others, and a combination of the two is not unreasonable.

The person to answer the basic questions is the audiovisual specialist, if the project is to be coherent and if he is to be more than a mechanic. He must, with each new job, define basic principles before turning his attention to technical matters.

The original question about service is academic; unless philosophy and the media serve together, they serve not at all.

ISSUES IN EDUCATIONAL COMMUNICATIONS: WHAT'S IN A NAME?

Donald Ely, Syracuse University

"If the Prince of Wei were to ask you to take over the government, what would you put first on your agenda?"

"The one thing needed," replied the Master, "is the definition of terms. If terms are ill-defined, statements disagree with facts; when statements disagree with facts, business is mismanaged; when business is mismanaged, order and harmony do not flourish; when order and harmony do not flourish, the justice becomes arbitrary; and when justice becomes arbitrary the people do not know how to move hand or foot.

...CONFUCIUS

Last summer a teacher enrolled in a course entitled instructional technology and discovered how audiovisual materials might help to improve his instruction. When this teacher returned to his school in the fall, he visited the director of instructional communications who showed the teacher the newly-published *Educational Media Index* which lists many types of instructional materials are housed, distributed, and used by students and teachers. An annex to this center was the materials preparation area where teachers prepare some of their own teaching materials. The teacher was confused by the variety of nomenclature but was pleased to obtain the materials he needed and to have received instruction on a new device which would permit him to create his own transparencies for the overhead projector.

Half a dozen years ago the audiovisual label would have been used for nearly all the italicized terms above. This somewhat exaggerated situation suggests the current state of confusion in which the "audiovisual" field finds itself. In a period of rapid technological advances, professionals in the field are uneasy about perpetuating the audiovisual terminology when so many of their new responsibilities go beyond the sensory implications of the audiovisual term.

The professionals in the audiovisual field are going through a period of soul-searching and name-searching. The mere outward identity is really incidental to the philosophical and operational questions. As a professional group questions its name, it concurrently questions its role.[1] In the audiovisual field, recent developments in language laboratories, programed learning, television, and computers have caused the audiovisual specialist to expand his professional horizons. No longer is he only the dispenser of the "things" of education, but is an active participant in the design and use of messages which control the learning process.[2] He serves on the teaching team, the building planning committee, the curriculum council and, at the same time, coordinates a host of administrative matters. He is more concerned about the process of communication and the process of learning than about the materials he handles. Of course he is responsible for the technological endeavors related to instruction within his school; however, the concept of technology in education has changed and is growing. It is clear that the audiovisual label is no longer sufficient to communicate the scope of this professional group. Historically, the identity of the field has evolved by one new name replacing another since the mid-1920's when visual education first appeared. (Figure 1) In the past ten years many new names have been created while the old term continues. If we can agree with Confucius that "the people do not know how to move hand or foot" when terms are ill-defined, then the imperative is for one term which will permit a universe of discourse among professional educators.

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[1] "The Function of Media in the Public Schools," *Audiovisual Instruction*, January, 1963.

[2] "The Changing Role of the Audiovisual Process in Education: A Definition and a Glossary of Related Terms," *AV Communication Review*, Jan.-Feb., 1963.

The simplest procedure would be to retain the present audiovisual identity. Some people within the field feel that a term develops stature as the professionals in that field develop stature. The changing of a word does not necessarily change the functions of the people operating under it. After all, the field of psychology is no longer the science of the spirit or soul as defined by the ancient Greeks, but the name remains. Proponents of "no change" feel that a field grows into its name and that a change of name does not change the field.

There are others, however, who feel that the audiovisual term is outmoded and that a new term can be the link to unify the diverse functions of the professionals within the field. A new name is not simply a matter of baptism but stems from the answers to searching questions regarding the role of professionals in the field and the primary objectives of this group. The audiovisual label is misunderstood in many quarters today because of early enthusiasts who were more concerned about their medium than about the message it conveyed. In recent interviews for *Audiovisual Instruction*, the question of the adequacy of "audiovisual" was raised with eight superintendents of schools.[3] Six felt a better name was needed, one had no opinion, and one felt that audiovisual was adequate. The many changes of identity already in effect by local decisions point up the dissatisfaction among people in the field.

What are the trends?

- Continued use of the "audiovisual" label modified by communications, instruction, and education;
- Continued use of the "materials" concept through such terms as: instructional materials, learning resources, and educational media;
- Attempts to reflect the process orientation of the field through use of the "communications" label, such as, educational communications, instructional communications, and communication resources; and
- Eventual evolution to "technology" in two forms: educational technology and instructional technology.

If this is a family problem within the ranks of the audiovisual field, what should professional educators do while the discussions ensue?

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[3] Audiovisual Instruction, January, 1964. (Entire issue)

- The audiovisual term (without hyphen, please) is established and will continue to be valid. Use it without fear of being obsolete.

- New terms have appeared and will continue to appear. Recognize the fact that these new terms exist and were created for a purpose. Try to understand why they are being used and express your opinion of the term to the person who assumes responsibility for it.

- Be aware that the name of the field is only a superficial identity and that behind it is a philosophical rationale.

- No matter what the field may be called, measure its worth by the contributions of its members. By their works you shall know them!

WHERE WE'VE BEEN AND WHERE WE'RE GOING
IN AUDIO-VISUAL EDUCATION

Albert R. Bailey, Bailey Films, Inc.

Because the past so often gives us hints as to our future, it's helpful -- and interesting -- to look through past history when trying to develop some guidelines for future activity in audiovisual education.

And to go back to the beginning of audiovisual is really not to go back so very far. Around 1920 men, like Charles W. Elliot, W.C. Bagley, and W.M. Gregory, were pioneering the new idea of visual education -- a visual education in which the slide and the motion picture were the predominate factors. In these early years there were summer courses in visual education, such as at Western Reserve University in Cleveland, and many school districts were already beginning to give teachers extra credit for enrolling in them. Much of the theory at that time was much like that of today so the courses had a familiar ring.

So with the audiovisual departments of the day. They didn't look too different from some today. You'll still find those located in the basement or closet! And they were full of films and film cans, but there was an important difference here -- the film size was 35mm and much of the stock was flammable nitrate, so the films were dangerous to use as well as bulky and heavy.

It was not until the early twenties that Eastman Kodak made the first 16mm size film and offered it on safety base stock only. The Victor Animatograph Co. made the first 16mm camera and projector to fit this new size film. The way was now open -- technically -- for a great growth in the visual education movement. But much was yet to happen.

This was a time in history when Hoover was president, ladies' fashions were somewhat extreme (incidentally resembling some of those today!), and the country headed into the "great depression."

Eastman Kodak was now making 16mm silent films especially for school use. These were a success educationally, if not financially; for it was a terrific project to try and get teachers to use new methods in their teaching. But it was an even greater project to interest some of the school boards and superintendents in changing methods!

But there was a definite movement toward the visual way of teaching. University film libraries were being established all over the country. They circulated films in 35mm and 16mm silent as well as lantern slides -- the large standard-size variety. A few were toying with sound films.

It's interesting to note this statement in a Brigham Young University film catalog, reflecting the tenor of the times: "Although the educational sound film has proved its value and is growing rapidly in favor, there is a general opinion among visual education specialists that the educational sound film will not make the educational silent films obsolete." Two years ago you would probably have laughed at this statement, but with the rise in favor of the silent 8mm cartridge film, perhaps they were not too far off.

But the growth was to be definitely to sound films, led by the ERPI company, an outgrowth of Electrical Research Products, Inc., which was turning out quite a number of productions.

At this time Eastman developed and marketed the new film size of 8mm with corresponding cameras and projectors. These were solely for home use, but destined as we know now, for a more important market.

The international scene was marked by such events as the Prince of Wales becoming King Edward VIII upon the death of King George V, the ship Queen Mary and the German zeppelin Hindenberg arriving in the United States on their maiden voyages, and Joe Louis being KO'd by Max Schmeling.

But there were also important events in visual education. Eastman's announcement of Kodachrome film -- the first practical color film for 16mm use. ERPI embarking on a gargantuan schedule of film releases -- over 20 in one year! And new people starting to make educational films for schools. On the west coast were Emily Frith of Frith Films, Arthur Barr, Paul Hoefler, Albert Bailey of Bailey Film Service. In Chicago another pioneering film producer started business -- Coronet Films. And nearby was a pioneer film distributor -- International Film Bureau. Bell and Howell Company founded Filmsound library to help provide a source for sound films that would give product for the new sound projectors they were making.

And the trend was now definitely sound with a number of projector companies (Victor, Ampro, Holmes, DeVry, etc.) touting the advantages of sound over silent -- and at not too much more cost.

Eastman Kodak and Bailey Films announced the first color teaching films, and S.V.E. released the first Kodachrome color slides. These slides gained rapid favor because they were small, easy to handle, and in natural color, as opposed to the bulky, breakable, heavy, monochrome or hand-painted standard size slides.

Among new products coming on the market were single concept motion pictures (16mm) that could be placed permanently in every school. A number of cross-media kits, including one on South America, contained filmstrips, study prints, maps, booklets, and realia!

In Educational Screen magazine a teacher in Ohio wrote about combining motion pictures and slides so each could be used where it worked best. A specially recorded record had sound for the slides (in the days before tape recorders). Photographs of her room showed maps, globes, books, and study prints, so she was certainly started on the use of multimedia materials.

A New York teacher wrote of enriching the curriculum with visual -- almost everything but motion pictures. She used slides, filmstrips, room environment, maps and globes, and the opaque projector.

Out in Portland, Oregon, Amo deBernardis had initiated a project (in 1940 as part of a defense program) to promote a better understanding of the people of South America by teaching the Spanish language in elementary grades. Significantly, this was taught with specially made phonograph records with an accompanying manual. As Mr. de Bernardis wrote, "These records were distributed to the elementary schools, and wherever possible to the homes of our students. In both places they serve as a self-teaching device. They can achieve satisfactory results with hardly any outside aid."

Here was local production, self-teaching, foreign language in elementary grades, and a national defense program -- all in 1940. I begin to wonder about the new developments we've made the last very few years!

Now, who were some of the people working in the visual field at that time. They included J.E. Hansen of the University of Wisconsin, Marian Evans of San Diego City Schools, Lelia Trollinger of the University of Colorado, and Paul Reed of Rochester City Schools (one of our very fine leaders whose recent loss will be greatly felt for a long time to come). In 1941 it was suggested that Mr. Reed take a second term as president of the Department of Visual Instruction, he'd done so well in his first term!

The war period, and the war effort, in spite of the fact that it was a long, expensive, and unpleasant period, gave an opportunity that audiovisual needed. This was the opportunity to prove that audiovisual -- and particularly sound motion pictures -- was a very valuable tool in training. It proved itself in the various branches of the service, in civilian orgaizations, and in industry. Because the motion picture was the glamour boy (so to speak) of audiovisual, its rise to fame helped the whole movement.

So when the war ended, there was a whole new beginning. Business Screen magazine marked this with an entire issue devoted to the Navy's use of films during the war. It featured articles by people such as Dick Lewis, Don Williams, Martin Hill, Walter Bell, and Herb Jensen -- all educators who were thoroughly sold on the training film and came out of the service (along with many others) dedicated to audiovisual teaching techniques. Many others, destined to be parents and school board members, were likewise sold, and formed a good background against which to spread the gospel of this still new method of teaching.

Because of the motion picture orientation, development immediately after the war was largely in more and better film libraries and more and better film companies. Existing companies expanded their production programs and many new organizations started in business.

Then came another step in development -- the broader concept of instructional materials, and very often the change in name from audiovisual department to instructional materials department. Materials and equipment like maps and globes, charts and chalkboards, opaque projectors, overhead projectors and transparencies, all became part of the curriculum rather than just aids or teacher helps. Audiovisual materials or techniques could never play a truly vital role in education until they became an integral part of the curriculum, as they were now doing.

As you know, the next step forward step came as a result of a foreign country, rather than as something we did: Sputnik. The Soviet Union's "Sputnik" emphasized our space program and the great technological explosion of our time and also the great population explosion with its increased needs for learning and understanding. These explosions had been going on for some time but it took this one event to focus attention on them.

One of the results of this was the National Defense Education Act and the great growth in all kinds of learning devices that followed. Let's examine some of these, against the background of our past experience that we've set up, and see if we can get some ideas as to where we're going.

Let's start with television. I think a mistake many of us make when thinking about television is to consider it a way or method of teaching. I believe television is nothing more than a method of transmitting an image from one place to another. The image or the lesson is what's going to do the teaching.

In order to get a background of activity in New York state to compare with national activity, I asked a number of people to tell me what's happening in their areas. Dr. Sherwin Swartout, president of New York State Audiovisual Council and Professor of Education at State University College at Brockport, believes in order to properly use television, the teacher must be an expert programmer and become a member of a teaching team. His two biggest reasons for television are its immediacy and the fact that it forces the improvement of the instruction practiced.

Paul Reed was a great believer in television, but primarily as a means of transmission. He felt strongly the need of good programing which meant giving good teachers enough time to develop such programs.

These men definitely reflect the advanced national thought which points to a future when the emphasis will be placed on the programing and not on the television system. The best teachers must and will be given plenty of time to carefully prepare programs for television. Whether your program is going into homes as adult instruction, or into classrooms, it takes a lot of time -- and a lot of money -- to do first rate programing. The lack of both of these is television's biggest problem. It seems relatively easy to get money for the station, the "system," the hardware, but very difficult to get money for the "image." Television in the future will have the emphasis on the program.

Now for team teaching. Some new schools are being built to incorporate this. Yet Bob Fite of Central High School District in Merritt, Long Island, mentions that team teaching has been done for years by the military and that numerous examples of successful team teaching are at hand in our secondary and elementary schools. So we see that special buildings are not necessary, and Mr. Fite reflects national opinion and the future trend.

Basically, as you know, team teaching takes the superior skills and knowledge of one teacher in certain areas -- and instead of having him work alone -- combines these skills and knowledges with those of other teachers, with the result that each contributes his best for a better learning situation. Some classes may be large for certain types of instruction, while others will be small for more individual types of work. But regardless of size of class, all will have copious audiovisual materials for their use.

Which brings out the most important point, and that is a well-equipped instructional materials laboratory will be a part of each team teaching unit. Trained help will be available for the production of all types of material not available from commercial sources. The audiovisual (instructional materials) director must place himself in a key role in the future of team teaching.

Teaching machines have been much in the news the last few years, but the important thing is not the machine but the program. Lee Campion, Director of the New York State Division of Educational Communications, says machines will progress cautiously, and he too is in the forefront of opinion.

Dr. Swartout sees teaching machines becoming more complicated and more simplified, with the "middle class type" of machine disappearing.

The future is really programed instruction, a better and more accurate term, and it will be realized largely through printed materials, and not through machines. Catherine Bailey, Supervisor of Audiovisual Instruction for Troy, New York, sums this up neatly by saying, "Last year we used teaching machines with two experimental classes. Maybe I colored the results with my own opinion, but we found the actual machine added very little to the knowledges gained. Children showed the same results when they used the program without the machine. Programed instruction has great possibilities and many of our teachers are working on their own programs."

Language laboratories hold much promise for the future, as their effectiveness is no longer questioned. Mr. Campion says they'll be placed in elementary schools at an increasing rate in New York state, a trend which is true in many of the advanced states in the Union.

Dr. Edward G. Bernard, Director of the Bureau of Audiovisual Instruction of the New York City Schools writes, "Language laboratories will include strong applications in the teaching of English, speech improvement generally, and possibly some aspects of teaching mathematics and other subjects."

So really the proper term should be learning laboratory instead of language laboratory, for the future will be their use in many subject area situations.

As you know, there are many types of learning laboratories of varying degrees of sophistication, but their success will depend primarily upon you, the teacher. For the creative and adaptible teacher will find many new ways to use this teaching tool.

The learning laboratory's use of magnetic tape is only an extension of the tape recorder, which has many uses (such as this individual use in the library) -- again subject only to your imagination as a teacher.

8mm is an exciting new learning tool that has many different possibilities. Warren Russell, Audiovisual Director for Kingston City Schools makes a most important point when he says, "8mm will have to go a long way before it can replace 16mm....but for single concept learning, I fully believe that these will come into their own with a bang."

I don't believe the future -- the near future -- will see 8mm replacing 16mm because of the large investment already made in 16mm equipment and films, but also because of the size element itself. Since the film is only half as wide as 16mm, and only half as high, the image itself is only one quarter as large as 16mm, not half as large as many believe.

Right now, 8mm's greatest use commercially is in the cartridge type of film, often single concept, that can be easily loaded. This will be a wonderful boon to self-instruction and to research work on an individual or small group basis. This is its future, in either silent or sound. Libraries, classrooms, laboratories, and study carrels will have the equipment instantly available.

Another big use that is looming more important is local production. Creative classroom teachers will have an opportunity to produce their own teaching films. They should do this when motion is important, otherwise they should use 2" X 2" slides or some other medium.

The biggest future for 8mm will come when we have 8mm optical sound with inexpensive Technicolor-type cartridge sound projectors. The large acceptance of 16mm sound films has laid a pattern for film use that will require sound on 8mm in order to effectively move it into the new pattern of individual and small group use of 8mm, which is its biggest future.

There is a future in materials, too, and I will speak particularly of motion pictures. Those films of tomorrow will be more specialized in nature. Not only will films be tailored more explicitly for grade levels, they are mostly general in nature, many will be quite specific so that it will be possible to use one film to introduce and motivate a subject or activity, others to present more specific information to the class as a whole, still others to be used by committees or individuals for reports and special investigations to be reported to the group, and additional ones to be used for follow-up and review.

Some of these -- for group use -- will be 16mm; others -- for individual and committee use -- will be 8mm. All will be sound, and all will be in a variety of lengths. Films will be long enough to do the job, not rigidly molded into 10, 15, or 20 minute lengths.

Way in the future is the automated classroom. What it will be is anybody's guess, for it will probably range from the individual carrell type of arrangement equipped with television, films, filmstrips, transparencies, and other media, plus perhaps connection to a computer, to complete school buildings or supreme sophistication.

Of immediate interest is a report from Ralph E. Grubb of IBM's Thomas J. Watson Research Center, regarding computer assisted instruction. Two installations are currently in experimental use at Pennsylvania State University and Florida State University that "permit tele-processing across telephone lines and allow both students and authors to use typewriter teaching stations." Basically programed learning, the system allows a professor to put an entire course in the machine which is set up to elicit certain responses. Correct responses take the student in one channel, while incorrect responses take the student to other channels. While this may sound like conventional programed learning, the computer offers almost infinite branching patterns; and it also makes it possible to automatically score or grade the student, keep track of all of his work for the entire course, report back at intervals, and keep both the student and the professor posted as to progress being made.

As fantastic and important as some of the ideas of the future are, I feel that some of the ideas which can be applied right now are equally important.

Do you have an adequate instructional materials center in each one of your buildings? Buildings, not districts. You should have, to handle all of your materials and equipment used within the building, to make additional materials as needed, and to procure outside-supplied materials and equipment.

Do you use study guides with your films and filmstrips? They are so important to the adequate use of any film. Copies should be in the teacher's desk, instructional materials center of each building, in the library, or circulated with the film.

Round guides in the film can lid may not be as complete as the larger size, but they always arrive with the film. Encourage your teachers to use guides, and be sure you make them available to the teachers.

Are your materials used right in the classroom? They should be, they are a definite part of the learning situation. Audiovisual materials were once considered aids or helps, but now they are a basic part of the teacher's tools of instruction.

Are you using small group instruction situations? You can -- without special buildings or plans. And provisions should be made for the use of a variety of instructional materials.

Are students using audiovisual materials in individual study and research? They should be. There is no reason to save these for group learning only. Many filmstrips -- even sound filmstrips and sound motion pictures with headsets -- can be used in study corners and listening centers within the classroom, and in the library.

The main purpose of our schools is to educate our children, and I think you'll agree with me that audiovisual materials of all types can help do the job better. But ahead of everything else is the understanding and creative teacher.

As Bob Fite says, "There will never be a device created under the sun which will replace the dedicated classroom teacher and a pen or pencil and notebook in the hand of the student."

So with you and your classes.

Well, today we've had a look at the past and the present and the future. We've found a little bit of the future in the past, and a little bit of the past in the future. As Dr. Bernard says, "It is always a great challenge to know whether we are coming or going."

There's just one more thought I'd like to leave with you -- whether your school is one of the present or one being built for the future, and that is a statement by Adrian L. TerLouw, Educational Consultant for Eastman Kodak Company. "The important thing about the school of the future is that its shape and facilities will be determined by the instructional program and the teachers and not by the new gadgets and devices."

Remember, the teacher is the most important item in the classroom!

EVALUATION OF PUBLIC SCHOOL EDUCATIONAL COMMUNICATIONS PROGRAM

Richard Hubbard, State Education Department

Every school needs a carefully formulated comprehensive philosophy of education. This is especially true in the field of Educational Communications. A school without aims and goals in this area would be as aimless as a society without a Constitution and bylaws. The philosophy and objectives of any school reflects the characteristics and needs of its students in determining the nature of its total program.

If a school should be free to determine and develop its own Educational Communications Program, in terms of its own educational philosophy, it should be one which is consistent with the principles of American democracy and consistent within itself.

In a school evaluation, the philosophy and objectives of the school, plus the many related programs, bear the same relation to the evaluative procedures as they do to the operation of the school. Any evaluation is a measurement of accomplishments versus the long-range aims and goals.

Many schools have developed separate administrative programs to provide the services that are appropriate to these newer media of communication. Others have developed an integrated administrative unit, generally called the Instructional Material Center, which furnishes all the services usually associated with the library, and in addition, provides the services connected with Educational Communications materials, radio, and TV.

The major purpose of the Instructional Materials Center is to serve the established aims of the total educational program by:

1. Providing a rich variety of materials (including books and other printed materials) recordings, still and motion pictures, film strips, and other instructional materials and resources for use by teachers and students as individuals, in small groups and in larger classes;
2. Offering leadership in developing techniques for the use of various materials by teachers and students;
3. Making available facilities, services, and equipment necessary for the selection, organization, and use of instructional materials; and
4. Furnishing facilities for assistance in the production of instructional materials and displays.

Just a year ago I was called upon to develop a form for evaluating the Educational Communications Program of a school system. Several requests had come from superintendents for this special treatment as they felt that the regular Cooperative Review Service did not look at the audiovisual program in depth. The following questionnaire is a result of three depth studies (Glen Cove, Greece and Farmingdale) and eventually being included in all CRS evaluations. The questions as they are posed are intended as criteria for the evaluation of the entire range of instructional material services, regardless of the degrec to which their administration has been unified. Therefore, many terms have been used which refer both to the library and to instructional materials and equipment; the term "audio-visual" has been completely eliminated because of its limited concept.

The procedure has included:

1. A written invitation by the superintendent to evaluate his program.
2. A primary visit by the coordinator of the evaluation team to explain the purposes and procedures of the evaluation.
3. Sending questionnaire forms two or three weeks in advance of the evaluation date for all administrators, Educational Communications staff, and curriculum personnel and librarians in any way connected with the program.
4. Visiting the school system by the evaluation team of at least three persons for a total of three days.
5. Conducting interviews, observing classes in session, and investigating facilities and materials by the team.
6. Gathering of all final data including the written observations and questionnaires and tallying of the questionnaires.
7. Writing the final report and distributing multiple copies of the final report to the school system, inviting feedback and further guidance in promoting the total Educational Communications Program.

It is obvious that several key persons need to become a part of the evaluation of the Educational Communications Program. Cooperative efforts out completely across subject areas and learning levels. Consequently, not just the program director and his staff, although they are important, look at the program, but all persons who have any relationship to the program, such as building principals, building coordinators, librarians, curriculum specialists, and many others share in the evaluation.

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Cooperative Review Service
Albany, New York 12224

EDUCATIONAL
COMMUNICATIONS
(February 1965)

The Cooperative Review Service is a partnership effort of the State Education Department and the local school system. It focuses principal attention on the teaching and learning process with emphasis on the adequacy of the curriculum; the training, experience, and effectiveness of the instructional staff; the quality of library, laboratory, and shop resources; and the extent to which the talents of all pupils are discovered and encouraged. The aim is to raise the quality of instruction and to advance the opportunities available to all pupils for better learning.

Instructions

- Note that items consist of standards and practices that characterize good school programs.
- Base your conclusions on the total program in the subject or service area, rather than on a single subject or grade level of the program.
- If you wish to qualify an item, enter an explanatory note in the space after it, or at the end of the section. If more space is needed, additional sheets may be attached. Identify by number and part all items which you have added as qualifying statements.
- If any important program features are not listed, insert a statement concerning these in the space headed "Comments" at the end of each section.
- At the end of this Guide there is a SUMMARY for indicating strong aspects of the total program, and areas in which improvement is needed. Care in filling out this SUMMARY is especially improtant in future planning for program improvement.

Name of School: ______________________________

Address: ______________________________

This form includes several terms in the area of educational communications. They all mean approximately the same but each has appropriate applications herin -- instructional materials and equipment, curriculum materials, and educational communications media and equipment. The term "audiovisual" is purposely omitted because of its limited concept.

This guide form should be filled out by school administrators, audiovisual personnel, and head librarians.

A GUIDE FOR THE REVIEW
OF
EDUCATIONAL COMMUNICATIONS

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to clarify any response, referring to the item by number).	Strong Aspect	Needs Improvement
Administrative Procedures		
1. A staff member is responsible for the administration of the total communications program		
2. Instructional materials and equipment are located in classrooms or departments where they are most frequently used, or are nearby		
3. Communications media and materials are made available to pupils and teachers as needed throughout the day		
4. Lists and announcements of new materials, equipment, and general developments in the communications field are made available to the faculty through:		
• Handbooks		
• Catalogs		
• Newsletters and/or bulletins		
• Other (Specify)		
5. Adequate professional books, magazines, pamphlets, and other materials for the communications program are provided for the faculty and pupils		
6. All communications materials and equipment are inventoried periodically		
7. The person in charge (or director) of the communications program, after consulting with member of the faculty, constructs a detailed budget for the program		
8. Accurate and current records are kept showing funds available disbursements, encumbrances, balances, and income		
9. Ordering and scheduling rented or borrowed instructional materials (forms, regulations, etc.) are made easy for teachers		
10. Materials can be obtained on short notice		
11. Secretarial and clerical assistance is provided for the program		
12. A budget item for communications equipment and materials is provided regularly		

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to clarify any response, referring to the item by number).	Strong Aspect	Needs Improvement
Comments on Administrative Procedures:		
Quality and Growth of Staff		
1. Teachers know how to operate and effectively use the communications equipment made available by the school............		
2. Teachers employ good utilization practices:		
• Preview..		
• Self-preparation.......................................		
• Preparing the class....................................		
• Showing and using materials under optimum conditions....		
• Follow-up activities...................................		
• Evaluation of total experience.........................		
3. Teachers encourage individuals and small groups to use communications materials for study and research.................		
4. Programs for in-school listening and/or viewing are used by teachers:		
• Educational radio......................................		
• Educational television.................................		
5. Teachers use facilities for pupil self-instruction activities:		
• Electronic classrooms..................................		
• Preview booths for educational communications materials...		
• Microfilm readers......................................		
• Other (Specify)..		
6. Faculty members visit other schools to observe production techniques and/or the effective use of instructional materials and methods..		
7. The communications staff actively supports professional organizations with membership and participation.................		
8. The staff encourages and engages in experimentation and publication relevant to the communications field................		
9. An inservice program concerned with the educational communications field is provided..................................		

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to clarify any response, referring to the item by number.)	Strong Aspect	Needs Improvement
Comments on Quality and Growth of Staff:		
Materials, Equipment, and Facilities		
1. Communications materials and methods are an integral part of total instruction..		
2. Materials are of varied types..............................		
3. Materials are of sufficient quantity for effective use......		
4. Equipment is available in sufficient quantity to avoid inconvenience and delay in its use..............................		
5. The types of communications equipment are of sufficient variety..		
6. Equipment is of sufficient quantity so that its use is effective..		
7. Large group areas are equipped with a variety of communications media..		
8. A central public address system serving a variety of administrative and istructional purposes is provided............		
9. Production facilities and equipment for constructing teacher-made curriculum materials are made available................		
Selection		
8. Teacher committees assist in the selection of educational communications materials......................................		
9. A file of film, filmstrip, and television teaching guides is provided..		
10. Equipment is selected on adequate technical and performance specifications..		
11. A clearinghouse of information is maintained, including an up-to-date file of community resources and films...............		
12. Data is collected on circulation as to the extent of use of materials of various types................................		

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to clarify any response, referring to the item by number.)	Strong Aspect	Needs Improvement
Materials, Equipment, and Facilities (cont.)		
13. Basic selection tools, such as brochures, bibliographies, and catalogs for specific subjects, are provided		
Classifying, Cataloging, and Processing Materials		
14. Communications materials of permanent value are classified and cataloged cnetrally regardless of where these materials are housed.		
15. The system for classifying, cataloging, and processing communications media and materials is adequate and efficient...		
Care and Maintenance of Materials and Equipment		
16. Communications materials and equipment are periodically inspected and repaired................................		
17. Records of the use of equipment are maintained.................		
18. Records are maintained on the repair of instructional materials and equipment..		
19. Equipment is individually identified and numbered, and the serial numbers are recorded.................................		
20. Storage facilities are available to meet the peculiar conditions (temperature and humidity, storage cases, cabinets, shelving etc.) required by certain communications materials and equipment..		

Comments on Materials, Equipment, and Facilities:

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to clarify any response, referring to the item by number.	Strong Aspect	Needs Improvement
Physical Facilities (Classrooms)		
1. As an integral part of classroom construction provisions for physical facilities relating to educational communications include:		
• Acoustical treatment....................................		
• Electrical outlets.......................................		
• Storage space..		
• Public address facilities................................		
• Door sills fulush with floor.............................		
• Sink with running water..................................		
2. Light control is provided using drapes, shades, and/or full-closure blinds....................................		
3. Classrooms have adequate ventilation or air conditioning....		
4. Ample, well-lighted display surfaces (chalkboard, bulletin boards, peg boards, display case) are situated in each classroom..		
5. Adequate provision for receiving radio and television in all classrooms includes jacks with conduit.................		
Comments on Physical Facilities (Classrooms):		
Physical Facilities (Auditorium)		
1. As an integral part of audiotorium construction, physical facilities relating to educational communications include:		
• Acoustical treatment....................................		
• Storage space..		
• Darkening and light control.............................		
• Electrical outlets.......................................		
• Projection booth or island...............................		
• Air conditioning..		
• Stage lighting equipment and controls....................		
• Inter-communication between projection and stage areas.		

Check (✓) the column most applicable to each item below: (Please expand any items under Comments to Clarify andy response, referring to the item by number.)	Strong Aspect	Needs Improvement
Physical Facilities (Auditorium)(cont.)		
2. Seating capacity meets reasonable educational and community requirements..		
3. A screen whose size, material, and position are correct for the room is installed..		
4. There is sufficient depth to the auditorium stage for rear-screen projection..		
5. Control of auditorium lights and sound system is possible from the projection and stage areas..		
6. Speaker jacks in the projection area are connected to the auditorium's (and the school building's) public address system..		
7. Special projection equipment appropriate for the auditorium is installed or is available for use..		

Comments on Physical Facilities (Auditorium):

SUMMARY

Use as many pages as needed to indicate:

A. Outstanding aspects, practices, and features of the program.

B. The areas of the program in which most improvement is needed.

C. What is being done to strengthen or improve the aspects of the program most in need of improvement?

D. Suggestions for futher improvement of the program.

NEW SYSTEMS FOR EDUCATION SUGGESTED BY OPERATIONS RESEARCH

Eugene Oxhandler, Syracuse University

Education has grown from an exclusive clique of readers, writers, cypherers and theologians to an instructional system endeavoring valiantly to educate all youth. In so doing educational systems have become exceedingly complex. So complex indeed that many sage seers have devoted lifetimes to the solution of their ever increasing problems -- problems of logistics and strategy, as well as, teaching, learning and socializing. Traditional research performed on these problems has failed to develop concrete, usable solutions. Newer techniques, able to handle multivariate situations, complex organizational patterns, and human inequalities are needed in an attempt to find solutions to these dilemmas. It is conceivable that some of the techniques utilized in dealing with military and idustrial complexity might also be applied to the educational mileau.

A major breakthrough in solving problems of vast complexity occurred during World War II when an interdisciplinary team of research specialists, attached to the operations branch of the British Armed Forces, was given the task of solving the operational problem created by the German "Wolf-pack" submarines which were rapidly starving Britain out of the war. The researchers set about solving the task by assigning monetary values to the cargoes carried by the transports, to the value of the human lives lost in air and sea protection, to the costs of producing and maintaining air and sea cover. A model of the operation was constructed and hypothetical solutions were tested through mathematical means. The most efficient and effective of the hypothetical solutions was then put into operation and is credited with saving Great Britain and measurably shortening the war. Research of this type was used after the war to solve some of the operational problems of an increasingly more complex industrial community. These interdisciplinary teams of researchers are credited, for instance, with designing the present stacking system used for entering and leaving major airports throughout the world, as well as determining the operational techniques to be used by tower personnel, pilots, stewardesses and ground technicians. Russell Ackoff[1] cites one of the more human experiences in the use of interdisciplinary teams. This incident occurred when the owners of a large public office building in New York City received complaints about the exceedingly slow elevator service. Analysis by an engineering firm showed that clients waited an average of forty seconds for an elevator, ten seconds more than the prescribed waiting period. The owners of the building, in desperation, were considering a million dollar reconstruction job to add new elevators until a psychologist on the research team came up with a simple and inexpensive suggestion. The next day full length mirrors were installed, at a cost of six hundred dollars, in all the waiting areas. The mirrors allowed the women to look at themselves and the men to look at the women without being noticed. Within a week the management had received letters from the majority of the complainants complimenting them on the improved elevator service.

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[1] Ackoff, Russell, A Managers Handbook of OR.

The problem solving approach used by the research team is accomplished by:

Applying the scientific method,
to a complex operational problem, which, generally, is quantifiable through the efforts of an interdisciplinary team.

Because of their concern with the operational aspects of problems these teams were called Operations Research (OR) groups. The first stage in carrying out an OR task is the application of the scientific method. A summary of the basic postulates of the scientific method follow:

Recognize and state the problem,
Construct a hypothesis which might be utilized in predicting possible outcomes or solutions,
Gather data,
Relate the data to the hypothesis,
Evaluate the hypothesis, and
Draw conclusions and recommendations from the evaluated material.

OR methods can be most easily applied to those complex educational problems which can be assigned quantitative values. (ie: In the administration of educational programs an OR approach has found that rental of computer time to schedule classes, keep attendance and construct budgets, is far more efficient and much less costly than traditional clerical means.) The requirement, quantifiability, does not, in any way, eliminate judgmental problems from consideration by OR teams. These interdisciplinary teams are usually made up of physicists, psychologists, mathematicians, engineers, statisticians and, in the case of education, educational generalists and are capable of handling complexity in either tangible or intangible situations.

It is the task of the OR team to establish the real problems (not necessarily the problem they are called on to solve), discover the dynamic relationships in the situation under study and establish the variables for the research task.

One of the major tools utilized by OR teams in solving problems is mathematics. Such terms as queing, stochastics, Marko chains, Monte Carlo techniques and Boolean Algebra are commonplace concepts to the OR man. He also uses statistics. These mathematical tools permit the OR team to constrast models for the situation under study. In OR a model is defined as a facsimile capturing the essence of one or more characteristics of the original which are pertinent to the particular study - it may be mathematical, physical, or conceptual. A model can be a body of mathematical statements describing a process, its parameters, and their relationships to one another and to environments; it is useful for rigorously studying complex relationships. Thus an Operations Researcher usually attacks a problem by attempting to construct a model of the existing situation. Through testing the model he discovers its usefulness in describing the system under study. From the original model he forms new models which he studies through simulation. In OR terms simulation is the process of copying or replicating the real situation without really disturbing the on-going process. Simulation is usually done in a computer where operations taking months to achieve results in the real situation can be accomplished in minutes. In this manner new strategies can be evaluated in a laboratory rather than in the far more expensive, real world. The decisions to be made about possible changes in an operation or system are, therefore, simplified. The process tends to produce an outcome which will increase the efficiency of both men and machines in the task under study.

OR can, therefore, be applied to many types of instructional problems ranging in complexity from those operational problems existing in a single classroom to the vast network of problems involved in the development of a new configuration for a total educational system. To facilitate an analysis of the possible uses of OR in the educational setting, a delineation of the two basic educational systems, however artificial, is necessary.

The first and most common system is stimulus oriented. It is characterized by external motivation, usually provided by a teacher but at other times by motion pictures, television or other media presentations. Most educational systems can be included within these parameters. The youngster just beginning his formal schooling is confronted by an already established, adult imposed, curriculum which delimits his path of study with almost no chance of change or modification on his part (unless he is either a genius or a delinquent). Within the school the child faces a teacher, or in some instances, a team of teachers who instruct him in the arts of reading, writing, computing and the social graces of societal existence. Stimuli(S), in the form of verbal, visual and/or multi-sensory messages are fed to the student who Responds(R) by some type of cognitive or behavioral change (hopefully). Throughout his school years (K-College) similar patterns face the potential learner--he is lectured to in ever increasing amounts as his tenure in educational institutions increases. In some instances the lecture is interrupted by various types of media presentations of didactic material or messages. The S-R pattern, however, is rarely broken, even with the introduction of the new media of instruction. What is developed within the student is not something called learning or knowledge but an ability to regurgitate the proper responses to a given set of stimuli. Obviously, all education cannot be so harshly castigated -- learning does take place in schools. It seems probable that something other than S-R takes place to allow information to be learned. There are theorists who feel that learning only takes place when the organism so needs to desires.

The second educational system which is individual-oriented is based on this theoretical pattern. The system is characterized by internal motivation, which finds the learner being highly selective, picking out only those stimuli from the environment that will meet his needs and/or desires. Within the ocean of existing educational systems there are some islands where individually oriented patterns operate. Teachers who act as guides and counselors of children, professors who conduct tutorials, administrators who provide book, periodical, motion picture, television and programed learning resources are all contributing to the available store of stimuli for internally motivated selection. Several examples of the application of OR to both the externally and internally motivated systems will help to illustrate the necessity of blending the two systems.

A major concern of any educational system is to provide the student with the opportunity to learn. In most lecture situations (stimulus oriented) information is presented verbally according to some predetermined plan (notes or a lesson plan) interspersed with personal anedotes and side excursions, sometimes meaningful. A student learns if:

--He listens carefully,
--He listens selectively (using an aural filter),
--He is stimulated by the dynamism, knowledge, orgainzation and wit of the lecturer, or
--He has been stimulated by a prior need or interest.

An examination of these reasons for learning shows that the teacher is responsible for only one of the four alternatives, the stimulation of the student by his dynamism, knowledge, organization and wit. In an attempt to maximize the learning-producing potential of a given instructor an OR experiment has been conducted.[1] The OR task was to:

--Examine the actual course presented by an instructor, (most lecture courses are never examined in any measurable way),
--Develop a descriptive model of the course as taught,
--Stimulate changes in teaching practice by reviewing the course material and hypothetically trying new patterns, and
--Restructure the course based upon the analysis of the model and an evaluation of the alternate solutions.

The first step, the examination of the actual course was accomplished by recording:

--Everything said by the instructor on audiotape,
--Everything written on the chalkboard by the instructor on single-frame 16mm film,
--All questions asked the instructor by the students and his responses,
--All questions asked by the instructor requiring answers from the students, and
--The responses made by the students to the questions (including notations on separate cards by each student stating whether he was sure of his answer or was making an educated guess. Incidentally, in the experiment, the instructor answered 64 per cent of his own questions during the presentation of new material (the figure was reversed to 72 per cent during review periods) and students who were sure of their answers proved to be right most of the time, while those who guessed were wrong more often.

The second step, the development of a descriptive model of the course was accomplished by looking at the films, listening to the audiotapes, tabulating the written student responses to questions and determining the effectiveness and efficiency of the existing method. Plotting of each lecture was done by a team consisting of the instructor and an instructional communications specialist. As the evaluators and charting process continued through all of the lecture units, a descriptive model of the course emerged. An examination of the descriptive model disclosed a number of interesting patterns. It was found that the beginning of every lecture session was devoted to testing and to review. As much as thirty minutes to an hour and forty minute sessions were spent in this fashion. In addition, analysis of the students' reponses to the instructor's questions disclosed distinctive patterns. Some students consistently missed questions invloving types of difficulties which revealed gaps in the student's backgrounds. It became obvious that some pupils were able to absorb lecture information and others had varying degrees of difficulty in the traditional lecture situation.

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[1] Experiment conducted at Syracuse University by Arthur Babick on a course, Introduction to Statistics, taught by Dr. Donald Meyer, Associate Professor of Education and Psychology.

The third step, the simulation of changes in teaching practices was accomplished by trying out alternate instructional patterns. In the experiment a series of overhead transparencies were prepared primarily as replacements for work previously done on the chalkboard. However, it was soon found that the transparencies were more than just chalkboard replacements -- they tended to structure the course. When questions were inserted within the transparencies, it was found that the behavior of both the instructor and the students were being controlled by the media.

To reduce the amount of time necessary for testing and review attempts were made to utilize both programed instruction and a cross-media approach (the use of a split screen where two slides may be displayed simultaneously - the slides may contain both stimulus and interrrogative material). Programed instruction was also tried on those student types who came to the course with a poor experimental background.

The fourth step, the restructuring of the course based on the analysis and testing of alternate solutions can be accomplished by:

--Developing new lecture techniques, incorporating the use of slides, motion pictures and overhead transparencies where these media could present material more effectively and efficiently than the instructor,
--Administering diagnostic test instruments to entering students based on the results of question responses tabulated in the earlier analysis,
--Preparing programed instructional materials for those students who demonstrated a poor knowledge of the language of the subject on the diagnostic test,
--Providing for individual differences in learning potential through scheduled laboratory and tutorial experiences,
--Producing automated cross-media review and pre-view sequences displayed prior to each lecture session,
--Immediate scoring of the review segment permitting the release from lecture sessions of those students demonstrating either a high degree of understanding of the material reviewed and previewed or a level of comprehension so low that the student would not profit from the lecture, and
--Assigning the high and low achievers to enrichment or remedial programed material.

The previous experiment has demonstrated, in practice, some alternate instructional procedures for blending stimulus oriented and individually oriented systems. OR techniques and tests can be utilized successfully in the fomulation of an educational system which has its base in student oriented learning.

Systems of education utilizing internal motivation have always existed.

Man in his infant stages, learns first to satisfy his needs then later his desires. An infant signals a need for food and is confronted with a nipple - is taught to suckle - does so and satifies the need (hunger). The recognizing of needs, the determining of goals, and the search for their satisfaction are all sub-sets of an internally motivated learning system.

The Greeks experimented with a form of tutorial instruction (Socrates and the Slave). Throughout the dark ages earlier cultures were transmitted by a primitive form of information transmission based on a need for knowing on the part of the monastic orders. Oxford and Cambridge Universities evolved from the medieval monasteries and primitive universities bringing the tutorial technique to a high level of learning productivity. All of these attempts at individually oriented systems suffered from the drawback of numbers. Tutorials require a one-to-one or one-to-two ratio. As practiced at Oxford the tutor or "Don" can only work with a limited number of students. This means that the colleges in the Oxford University complex have to be highly selective in their admissions policies. Oxford can afford to be selective because of its age-old, reputation. However, most schools and colleges throughout the world are in a much less enviable position. They must try to educate large student populations with relatively small faculties - the primary reason for the adoption of the lecture method of instruction.

The tools and techniques of OR provide the educator with the methods for activating internally motivated systems for large student populations. The techniques of OR analysis can refine terminal objectives for subject matter as well as new patterns for the display of information to individuals or to large groups of students.

An adaptation of the tutorial system suggested by OR is one developed by the author in which the Don system is revitalized. To activate this system a computer as the control agent is essential.....

(Obviously human beings control what goes into a computer and what the computer does with the information but the computer can perform its assigned tasks far faster and probably far more accurately than human beings.) The computer is fed the following types of information:

- --All available data about each student including standardized tests, school records, interviews, physical examination results and wherever possible, his interests, fears, needs and expectations;
- --All available information about the instructors, their interests, skills and scholarly areas;
- --All information sources within the institution including library holdings, audio and visual materials, periodical literature, and research data;
- --Teaching machine programs for all disciplines covering factual, vocabulary and conceptual material;
- --All available learning spaces including classrooms, offices, dormitory and seminar rooms;
- --The operating budget of the university;
- --Feedback loops so that research may be performed on the system by the system itself;
- --A continuous feedback of information from the instructors and the students as they progress through their mutual learning programs including learning increments, problems and newly formed goals.

- --All statements of terminal behaviors for students as determined by university subject matter specialists;
- --Goal specifications including jobs available to graduates and requirements of graduate schools in all areas and disciplines; and
- --All necessary operating programs for the computer itself.

All of this information is essential to the operation of a revised Don System. In the Oxford-Cambridge system Dons and students meet regularly to discuss the students' development and mutually agreed upon goals. However, the number of students who can be educated in this system is limited. Our universities are far more crowded than the two traditional English schools necessitating the computerized system which can do the following:

- --Provide the professor (Don) with the necessary guidance information to conduct the original, diagnostic, tutorial interview with students who select him for their instructor ;
- --Permit the student and Don to establish realistic goals, as well as setting up short range problem solving situations ;
- --Schedule through computer analysis, further tutorials, seminars, lectures, demonstrations, individual study through forms of programed learning (including computer based teaching machine programs), learning spaces, laboratories and creative facilities as the interviews are completed ;
- --Print out resource lists, bibliographies and abstracts tailored to the needs of each individual ;
- --Tabulate and compute costs to make the best possible use of all university resources guided by the fiscal capabilities of the institution ;
- --Feedback to the system necessary changes in the system or its sub-systems to make the total system even more effective and efficient; and
- --Do research on how students and teachers learn, individually and from each other.

This is not a far-fetched Utopian dream. Parts of it have already been put into operation in my own courses here at Syracuse University. At the New York Institute of Technology in New York City the major portions of the Don System Revitalized are actually in operation. In the article written for publication in Audiovisual Instruction, May 1965, Dr. Alexander Schure, President of the New York Institute of Technology, documents in detail a system quite similar to the one I have proposed. It has been in the development stage for the past five years and has just completed its first full, experimental, year with some exceptional accomplishments including such startling things as: no rejections on admission, no dropouts, tremendous gains in learning and a huge saving in both learning and teaching time. What seems at first glance to be a dehumanized educational network is, in reality, a way through the clouds of massed students to a return to the one-on-one teaching relationships so revered by antiquity. The machine becomes then the slave of man, not man the slave of the machine.

SURVEY OF THE STATUS OF EDUCATIONAL COMMUNICATIONS IN THE STATE

Loran C. Twyford, State Education Department

The Division of Educational Communications is currently planning a survey of the status of Educational Communications in the State. The purpose of this presentation is to inform you of our preliminary plans so that we may receive suggestions from you concerning its directions. At the present time we do not have accurate information on the following:

(1) Who are the full-time Educational Communications Directors in the State?

(2) How many part-time Educational Communications personnel are there and what are their names?

(3) How many film libraries are there in the State and how many films do they have?

(4) Is the use of programed instruction increasing and what are its best areas of application?

(5) Is television utilization still increasing?

(6) What is the success of various types of electronic classrooms and language laboratories?

(7) What are the standards for the numbers of projectors and other equipment for the State?

(8) There are many other additional questions for which information would be helpful.

We have reviewed surveys conducted on a national basis and by other States. The preliminary findings by the Eleanor Godfrey Report may give us some guidelines for national trends. The U. S. Office of Education publication on film libraries maybe useful to us in setting up our program. The study conducted by Washington State on the status of libraries and audiovisual programs will help us in planning our own questionnaire. The Department has conducted several television surveys which will help us determine the trends in the utilization of television programs.

We have considered other needs for a survey of this type. The local school Educational Communications Director needs to prepare an annual report on the problems and the status of his own program. He may also wish to conduct a self-evaluation of his own program in order to determine its strengths and weaknesses. Perhaps some of the information we may request will be used in this manner.

There are several important factors to be considered in planning a survey. The number of surveys that a local school may be requested to complete is necessarily limited. It is also important that any information that is collected has an important use. If possible, it would be desirable that the information be used in a number of ways. It would also be important for us to show trends in the development of various media. The end result of this survey should be a report in which we summarize the individual responses and develop norms for various parts of the State. We also plan to use this information in developing our program at the State level and hope that the local school districts may find it useful in evaluating their own programs.

At the present time we have collected ten questions from each of our staff members related to his area of responsibility. We plan to organize this information into a questionnaire which we hope to send to the schools this year. Your comments on this plan would be appreciated. We will report on progress at a later date.

administration

DEVELOPING ADMINISTRATIVE, TEACHER AND COMMUNITY INTEREST AND SUPPORT FOR EDUCATIONAL TECHNOLOGY

Frank Mathewson, AV Consultant

PASS THE BALL -- SHARE IT WITH A TEAM

In developing interest and support for educational technology it is important to share policy making, policy execution, budget making and credit of success with others. Guide but don't boss. Lead but don't drive. The group's program will get further than *your* program. Don't go it alone.

Several years ago White Plains initiated CCTV long before I expected it would. In one of the elementary schools a sixth grade teacher, after a National Science Foundation summer scholarship, had been intrusted with teaching science to six sections of the fifth and sixth grades. This breakdown of the self-contained classroom seemed to be an excellent opportunity for the introduction of CCTV. The principal agreed and we were among the first communities to borrow the State Educational Communications' simple TV camera and receivers. The results were excellent with this innovation. The principal and teachers were enthusiastic. About 20% of the school's staff taught on CCTV or operated the camera. The superintendent agreed that the *principal* should report on the project at the superintendent's staff meeting of principals and supervisors. The principal's report was so glowing that the staff actually became excited about it. "How much would a camera TV cost?" "Was there enough money in the budget to buy one now?" "How much would it cost to connect all the schools in a CCTV network," "Would color TV cost much more?" I was dumbfounded. We were launched in CCTV years before I expected -- and by the *principal's* report -- not mine.

Have an AV policy committee. Who should be on it? A representative group comprising the director of instruction and one or two each of principals, subject supervisors, building coordinators, and AV minded customers -- your teachers. You may wish to include community representatives on this or another policy committee including commercial film, radio and TV persons, the League of Women Voters, Service Clubs, of course the PTA and even those tax conscious taxpayers groups and the Chamber of Commerce. Occasionally use outside specialists such as members of the capable and enlarged staff of the State Division of Educational Communications, or if you need more time, an AV consultant like myself. As they say, a prophet is frequently without honor in his own country. Sometimes a specialist from outside, that cannot be accused of building his empire, can say what you would say with greater acceptance and effectiveness.

Have AV committees to help select materials in the various subject areas. Occasionally use other supervisors' staff meetings or meetings of primary and intermediate teachers, or school staff meetings to select materials or introduce previously selected materials to large groups of teachers. Have exhibits at these meetings. Use other administrators' meetings so that you don't need to call extra meetings for your work as far as possible. Share the ball.

HELP OTHERS WITH WHAT THEY WANT TO DO

Don't just ask them to do what you want them to do. By all means assist the superintendent with charts, graphs, slides and overhead transparencies to help him explain the budget and get the bond issues across. Suggest some of these methods. Many superintendents do not understand the possiblities of some A-V techniques. Take the pictures he wants for publications and public relations. Build up a file of pictures that you think he might need or that show good educational practices. Knock yourself out to take those pictures that he wants immediately, if not sooner. A Polaroid Land camera will help do this and most publications will now accept them.

Help the principals with what they want to do. Set up that bevy of six or eight microphones for his panel discussion. Survey his building, at his suggestion from your prompting, for needed power outlets, bulletin boards, refinishing of chalkboards and darkening facilities. Take pictures of his pet projects.

Help the teachers beyond just instructing them in the operation of equipment and providing the materials and equipment. Make it very easy to obtain the materials and use the equipment. Search hard for the unusual teaching materials that some teachers may want, such as color slides of fish or the animals of New Zealand. Help them to construct tailor-made local audio-visuals for their unique needs. Never cause them embarrassment over damaging a film -- but be sure they understand how it happened, so it won't happen again -- you hope.

VOLUNTEER, WORK WITHOUT PAY, BE KNOWN

Assist many community groups. Help the mayor with slides to explain urban renewal, buildings to be torn down, artists' renderings of proposed new buildings, and even slides of maps showing the areas affected. Help the historical society with slides of fragile pictures and historical spots in the community. Help the League of Women Voters to visualize their projects and above all help the PTA by obtaining films for their parent education or general meetings. The local unit and council should have an AV chirman, find out who he or she is and work with him. Urge the appointment of one if this has not been done. Seize every opportunity to speak before groups; church progras, service clubs, and the PTA. Use visuals, demonstrate a TV camera (they will love to see themselves on TV), show locally made slides, amaze them with overlays on transparencies, and use films such as "The Unique Contribution" so that the parents and taxpayers will understand that these are not just movies for entertainment. One word of caution, only occasionally except for the PTA, serve just as a projectionist. You are an educator, so don't get typed as a technician.

HAVE A LONG RANGE PLAN

Have the plan developed with the assistance of the advisory committee as mentioned before and adopted by them. Then present the plan to the entire administrative and supervisory staff at a meeting, with full discussion. After its adoption by the staff assist the superintendent in presenting it to the Board of Education for their consideration. Then it can appear in the press. Express it first in terms of the general educational goals to be achieved, the specific benefits it will bring to teachers, students and the community, and how it will improve education. Then state the personnel, equipment and materials needed year by year to accomplish these advances. Spell it out, explain why, and justify it. Once the long range plan has been adopted by the staff and the board you have a powerful tool to have funds to implement the plan in the budget.

NOT YOUR AUDIOVISUAL PROGRAM

Of course its not yours. It belongs to the whole professional staff. They helped plan it, they use it, they supported the inclusion of funds for it. Nor should it be an audiovisual program. It is a unique and priceless service to the educational program, developed to meet the needs of the curriculum, the teachers, administrators, students and the community. The taxpayers must be shown that educational technology is worth the cost. The public schools are the public's schools. Don't forget your ally, the PTA, the lay group most interested in our schools and the first line of defense of public education.

DEVELOPING AN AUDIOVISUAL PROGRAM IN A SMALL SCHOOL IN COOPERATION WITH BOCES

Jane W. Smith, Westfield

Significant changes in education are ocurring in all educational fields. The small school system is affected exactly the same as the larger systems. Students today in all sections of our country have access to all forms of communication such as television, motion pictures and radio whose boundaries would seem to be limitless. We must reach our students by forms of comparable communication. No longer can a teacher stand in front of a classroom - book in hand - and lecture. He will lose his audience in minutes - if not seconds.

The "process" of technology is the operation involved in taking basic knowledge and interpreting it in forms of communication that are comparable to a student's background and comprehension. He must have stimulation equal to his environment. Stimulation is the "crying" need of children today in our school programs. We must compete with "Bonanza," "The Beatles" and "The Twilight Zone."

Have you noticed how your eyes automatically focus on a screen, how you will listen to a radio or recording even though there is a person talking? Conduct an experiment with your classes using audiovisual devices. The answer is a challenge.

I am best qualified to speak from my own experiences in developing an audiovisual program. How to start? First, the administration must realize the importance of an audiovisual program. Fortunately I have a Supervising Principal, Mr. Wilferd Greenfield, who is progressive and extremely interested in improving his school system. He has supported me in my total endeavors and I truly could not have succeeded without him.

The job was a challenge and it has been fascinating. When I arrived, there was little with which to work. We had four "old" movie projectors, three filmstrip projectors, two record players, two ancient tape recorders and three small opaque screens. This was the Audiovisual Department. Teachers signed out for equipment, if they remembered to do so. Filmstrips were located all over the building - many in forgotten closets. Some had never been opened.

To assemble order out of chaos, help was needed. An Audiovisual Club was formed and boys were immediately trained in operating all equipment. They in turn helped the teachers, using their study hall periods and many hours in the afternoons and evenings. Four of these boys are now seniors planning to enter college next Fall. One boy has already been promised a full time position working in the audiovisual department in a college. I must admit that technically these boys can surpass me many times in their knowledge of machines and production equipment. The club is recognized by the school and each year the boys receive a specially designed emblem with a stripe for each year of service to the school.

The first important task after assembling all available equipment was to prepare a simple booklet for all teachers. This contained information on the available equipment, operating instructions and ideas on how to improve teaching procedures by using audiovisual devices. Then a system for using these devices had to be established. We have yet to perfect this but now I only lose equipment about once a week instead of daily.

New equipment was purchased for the following year and by January of that year I had three released periods a day for the Audiovisual Department. With the diazo printer transparencies would be produced for the overhead projectors but this was limited with only two overhead projectors for circulation to seventy teachers. The Mathematics Department had two of these projectors but they were usually used as glorified blackboards. At first the demand was very small but as the teachers began to use the overhead, they were thrilled with their effectiveness. My problem was to keep them moving. Once a teacher has an overhead projector, he is reluctant to part with it. Usually they are signed out in advance by blocks of time of two to three weeks.

The guiding philosophy is to have the teachers really want the equipment before purchasing. This is proving most successful. We now have feuds, but we are using all the equipment fully.

This year the department has been increased tremendously. We have all the production equipment necessary for operating a good production center and the faculty is using it. The increase has included twenty-two 70" by 70" screens aiming towards a screen for each room. There are eight overhead projectors, three tape recorders, ten record players, six filmstrip projectors and seven motion picture projectors. I have five periods a day for audiovisual and need a full day to meet the demands. Our next step is to provide proper blinds for the rooms that are too bright for many audiovisual techniques and to provide, of course, more and better equipment.

All filmstrips have been catalogued and our filmstrip library has grown. Every year beginning in April each grade level and department previews filmstrips for purchase the following year. According to our budget, we try to divide equally the purchases in all fields and levels of study. We have increased our filmstrip library by several hundred in just three years. As the Audiovisual Coordinator, I have filed the unit plans and notify each grade and subject area teachers the filmstrips available for their use by the week or unit.

Alan Ramm, of our Social Studies department, has been experimenting with David Crossman of the State Department on Teleprompter equipment. Another interesting experiment has been conducted with our first grade teachers. We taped one class the first year in late October after they had completed their pre-primer reader, and then again in May just before the open house for parents. This clearly showed how a child had progressed in the reading program.

It really was an unusual open house for the first grades. Displays and examples of the children's work were completely ignored. The parents from the other rooms were very concerned that their children had not had the same experience.

The result is obvious. We now tape all first grade children each year for the open house and more than fifty percent of the tapes are purchased by the parents.

In our Audiovisual Center we have produced the K. & E. Geometry transparencies for the Mathematics Department, the K. & E. American History transparencies for the Social Studies Department and are currently working on the K. & E. Biology Masters for the Science Department. Each grade level is starting a transparency library with several basic transparencies for each teacher. There is a great demand for spirit duplicator masters. We try to produce these and deliver the final multiple copies to the teachers with one day's notice.

This service is important! All teachers, as you know, have excellent ideas but lack the time for preparing the needed materials. We hope in another year to have one of our art teachers available at least one period a day to prepare transparency masters, bulletin boards and masters for slides from *teachers' sketches.*

Personal contact with each teacher is a "must" for a successful audiovisual program. Actual classroom demonstrations are the most effective means of illustrating audiovisual techniques.

All of you are familiar with the teacher who is scared of machines and the one who claims to be too old to change. You can reach her by helping her individually. Just by stopping in the room a few minutes to adjust the placement of the overhead projector or motion picture projector will develop more confidence.

I try to work with each of our teachers and have found them most receptive. In their willingness to try anything which will enable them to determine whether or not to use audiovisual devices, they are grateful for help. Oh yes--there are some who are unresponsive but just a few.

An Audiovisual Director can help correlate the school's program by suggesting films and filmstrips by units or grade levels. We have started this in our English Department and for the first time our third, fourth, fifth and sixth grade teachers are building a program towards better sentence structure and usage.

Suggestion sheets and new ideas for using audiovisual materials are sent daily to our teachers. Many of these I deliver myself for better communication and the personal touch.

This program has been developed through the cooperation of the administrators, the school board, the public, and, of course, the faculty. It is tremendously important to have this cooperation. We had four workshops last year for the faculty and a special demonstration of the Audiovisual Department for our School Board. The Audiovisual Club boys demonstrated all our equipment and we also had one room with new equipment for their approval. A three-year budget was planned and each board member had a copy to study. By having attended this demonstration, the board members now have meanings for the words. Naturally the budget was cut but actually very little. For a system of 1498 students it averages over $4.00 per student. $1200 a year is our membership in the BOCES Film Library. Except for free films we are now able to secure all our films from this library.

Our goal is always toward the horizon of improved learning for our students--a communication between them and their world. We are aiming towards a programmed, cultured background of knowledge for each child. We hope each year to improve our school system by raising our standards of instruction and techniques of learning.

Our BOCES Center is just establishing itself. The film library is only two years old but we have the third largest suburban-rural area library in New York State. Sixteen schools with a possible 20,000 pupil participation are members. Each school presents a suggested list of films for purchase for the following year and then the Audiovisual Council evaluates these lists in each subject and grade level for the final purchase. All films are then ordered with the understanding that they may be exchanged at the end of the school year if not satisfactory.

Most of you are familiar with the procedure of depositing films in a library for consideration by commercial film companies. Naturally we use every method and opportunity of finding and keeping outstanding films. Several commercial firms and companies have deposited their free films with us permanently and a few on a temporary loan basis. We now have 49 free films in our county library, and hope to have many more next year.

This program has been developed by Mr. Philip LoGuidice, the District Superintendent of Schools, and by Mr. Francis Tonello, the curriculum coordinator. Their guidance and hard work has been the backbone of the organization. The personal contact has made our film library a success. Our teachers can visit the center to preview films as well as order them by mail. Most teachers object to ordering a film a year in advance. How can they know they will need it on the exact day it is to arrive? We may book ahead for six months if desired, but most of my teachers, particularly on the secondary level, prefer one month to even two days' notice.

This film library is ours and we plan to make it a total success for our teachers.

An Audiovisual Council for Chautauqua County was organized last March, 1964. Each school has one representative on this council which meets once a month at the BOCES Center. The main purpose is to coordinate the audiovisual program in the county.

All techniques of audiovisual are studied and discussed at these council meetings. Each month a demonstration is given by one or more members. During the past year, we have included lettering techniques, transparency production, film evaluation, new equipment and just plain "ideas."

Our success has really been overwhelming. Last year new equipment was studied and evaluated by the council with a resulting group purchase that reduced costs considerably and increased purchases. A production center has been established for transparencies for overhead projectors. The K. & E. Master Books are available for reproduction by the Center or individual schools and original transparencies will be exchanged and reproduced. Literature is available in all subject areas. An "idea center" is being gathered for old and new teachers.

An art student has been employed on a part-time basis to produce original transparency productions. Each school may send sketches for original transparencies as well as using the master books. This is important as only three of our schools have complete production centers. All production supplies can be purchased through the center at a cost of one-half the retail price. A nominal charge of 25¢ is made for each transparency.

One of the services provided by the Audiovisual Council is a workshop team available to any school requesting such a program. These workshops "spark" interest. They stimulate and challenge a faculty. Commercial demonstrations are excellent but most teachers feel on a closer level with their own associates. This team tries to provide ideas and to show examples for the total school program. Several of our Audiovisual Council members have been scheduled more released time for audiovisual after the administrators and teachers realize just what can be done using today's modern methods of instruction. This is essential for an audiovisual program in any school system.

Our program has just begun. We have our problems - problems in scheduling of films because of a lack of adequate salaried workers, problems of more films needed in many areas and problems of an improved system for our production equipment. We are not discouraged. In fact, we are encouraged by the reception the BOCES Center is receiving in our area. The first steps in progress have been firmly established.

SCHOOL PUBLIC INFORMATION PUBLICATION WITH EMPHASIS ON VISUAL COMMUNICATION

James Mason, Ithaca

Public information and public participation are the two most powerful tools for improving schools. If the public's concept of our schools is to be improved, then we must appeal to them with the most widely-used methods of interpretation and communication. This means informing the public through a multiplicity of communicative media--all of which are calculated to enlist the public in an effort to better their schools. We must develop a two-way flow of ideas between the schools and the community, thus providing a foundation on which to build understanding and effective team work.

It is essential that we maintain the public's interest--nurture and develop it--in order to insure the best education for our children. Public interest can be constructive or destructive, positive or negative. Those who sincerely desire to help may actually hinder if they lack the essential information or understanding of the school enterprise. Therefore, if for no other reason, the field of public relations is particularly important now and in the years ahead. In order to accomplish these goals we must develop a practical program of public relations that realistically presents our educational efforts to the community.

Now, what is the role of publications in this on-going enterprise? And, why should we concern ourselves with the problem of presenting the school story via the avenue of the mimeographed or printed publication? Before I can effectively present the program carried out in the Ithaca City School District, I must set the stage by analyzing the problems that we have created due to the lack of a practical approach to public relations.

Problems

The problems facing us today, while not created by our poor public relations, have been greatly magnified by not effectively telling the school story. And, today, more than in any other decade, we are faced with a greater number of significant problems which will have far-reaching effects on our educational enterprise. I like to summarize these problems under five categories, which I have labeled "The Five C's" of education's modern dilemma. Let me touch on these, momentarily, as a bridge to the public relations program which I believe in and operate as part of the Ithaca City School District:

1. Civil Rights - Education has become the battleground of the civil rights movement. The public relations program and problems in this area are unbelievable--in some instances--impossible.

2. Costs of Education (Taxes) - We are the most vulnerable public agency, subject more to the voting whims and attitudes of our citizens than any other governmental or non-profit organization. Therefore, we often bear the brunt of tax revolt, economy drives and political dissatisfactions.

3. Church and Schools - Education has become the battleground for constitutional rights in relation to Bible reading and school prayers. Add to this the long-standing dilemma of federal and state aid to parochial and private schools and you have a deep and seemingly unsolvable problem.

4. Critics - Education will always have educational critics; everyone knows a little bit about education because they, all, have been in school. Apparently, we have accrued a bumper crop of critics, who know more about the "what" and "how" we should teach than in any other time in our history.

5. Change - We are in the middle of a technological revolution which is responsible for an unparalleled rapidity of change in our instructional techniques and methods and curriculum offerings, plus an increasing demand for more and more auxiliary services.

Public Information and Public Participation

Public information and public participation are two of the most powerful tools for improving schools. If they are to succeed, a school district must have a practical and consistent program of public relations in operation. This program must have an established base of objectives from which to work in seeking public support for the educational enterprise. It is important to remember that every school district is different and each requires different kinds and degrees of public relations. The basic objectives for any program should be as follows:

1. To seek favorable public opinion through a continuous program of communications.

2. To utilize community leadership, through the partnership concept of "our schools."

3. To present the educational program actively through a variety of communications techniques.

4. To provide a two-way flow of ideas with the community. Learn to listen.

5. To work in close cooperation with press, radio, and television in presenting the school story.

6. To present a sincere and honest accounting of the educational enterprise.

Principles of Operation

The principles of operation in a public relations program can best be defined by citing a series of "musts" that should be adhered to in presenting your program to the community. The program must: be honest, be continuous, be positive, be comprehensive, be sensitive, be simple, be planned, be long-ranged, be adaptable if it is to be effective and achieve its stated goals. This leads us to the consideration of the specific area to which I would like to address myself at this time--the use of school publications in telling the school story.

Publications in Action

The utilization of the foregoing objectives and series of "musts" establishes the foundation necessary to the implementation of an action program. Let us examine the action program as it now functions in the Ithaca City School District and as it pertains to the school publications. Remember, it is nice to have a public relations director such as we have; however, it is not absolutely necessary, even in the larger school systems. The constants of a good public relations program can be practiced in degrees, according to the staff and funds available. You may have to revise your heirarchy of responsibility, duties assigned, and related time devoted to this area, but all this is possible in any school district.

Let us first examine why we use a publication. In other words, how do you validate to your board of education and your community the investment of time, effort and monies in the preparation and publication of school brochures, pamphlets and flyers? I like to think that the following basic points offer sufficient justification for the inclusion of formal publications in any school district:

1. If the program is worth writing and having in operation, it is worth a publication.
2. A publication provides you with a mimeographed or printed record of the program. It is a ready reference for others who plan to implement or utilize the program.
3. A publication indicates completion of work or accomplishment of a task. It becomes the guideline for the implementation of the program.
4. A publication provides program continuity. Not everyone can be involved with the actual program but everyone can read about it and become vicariously related to the subject under discussion.
5. A publication presents your educational program to the community--it helps to sell the program.
6. A publication serves to build staff cooperation and unity, through their participation in its preparation.
7. A publication can be an excellent in-service training device; the development of the material for the publication and its actual production have great educational values.

The Ithaca school district has produced a variety of printed materials during the past three years. Some of the key ones, with a brief description, are as follows:

Adult Education Brochure: A general description and information booklet concerning the courses offered in the adult education program for the school year.

Annual Report: A resume of achievements and progress in special areas during the school year.

Budget Monograph: "The School Budget and the Child." An explanation of purposes and goals to be attained in preparing an annual school budget document.

Budget Document: The final budget document for the school year.

Speakers Bureau: A listing of the personnel of the Ithaca City School District who will speak to community organizations on educational problems, their own work, their travels, or their hobbies and interests.

Educational Communications: Facts about this department in the Ithaca City School District and how it is utilized by the schools and the community.

"Let's Discuss Homework": The recommended schedule of assigning homework. This was distributed to every family in the community having children in school. It is expected to expand the "Let's Discuss" series to include all major academic areas in our schools.

Newsletter - "Centrally Speaking": Notes and comments emanating from the administration offices. Published monthly and distributed to all personnel.

Plant Modernization Program: A schedule of building and remodeling plans to meet the growing needs of the Ithaca City School District.

Your Tax Dollar: Summary of the 1964-65 budget, depicting the educational and financial commitments of the school district. Also, showing tax rates on district property and a progress report of the Plant Modernization Program.

Teaching Writing to the Gifted: A course of study for teaching writing to the gifted student in grades seven through eleven.

Handbooks - Kindergarten, Elementary, Junior High, Senior High: Books for guidance of teachers in carrying out their assignments at each level. Each book is a combination of policies, procedures and methods which are to be standards for day-to-day activities.

Teacher Orientation: A folder to hold orientation materials for the teacher; a printed calendar for the year, and a schedule of the orientation program at the start of the school year.

The Glenwood Plan: A brochure describing the district's new continuous progress education program.

Substitute Handbook: Presents the key rules, regulations, guidelines, and policies of the system. Provides available information service to substitute teachers.

Position Descriptions: A compilation of all duty and function analyses of the professional staff.

Teacher Procurement Procedure: A step by step analysis of the district's teacher selection technique.

Curriculum Guides: A series of subject guides prepared as part of the district's curriculum development program.

Eight Elements: A specialized five-year program of change.

Key Factors

There are certain key factors that must be uppermost in our minds when we attempt to produce a good public relations program. First, it is essential to develop a master program, through which the goals and objectives of the total public relations program might be achieved. Second, it is essential to have long-range planning. Proper spacing of publications and the production of specific programs have greater appeal to the community. Third, there should be a variety of publications; size, format, content, should all be considered in each publication. I think every program should have some form of newsletter on a regular bassis, whether mimeographed or printed. It is often advisable to have a special series of pamphlets related to subject matter or topics of current interest. Special feature publications should, from time to time, be produced which treat programs which are receiving national attention. It is important to have a definite budget for this purpose, the publications do not just happen. In conjunction with the budget, project planning and staff assignments should be made well in advance to insure completion and eventual release of a publication. A definite distribution system should be established. Some systems even develop publication centers, which could be coordinated with material or curriculum centers. It is even possible to prepare organizational charts for committee assignments relating to the content of the publications. Finally, a chronological flow chart or calendar of publication dates and releases should be prepared.

Summary

It must be remembered that publications are only one phase of a comprehensive public relations program. If they must stand alone, they will not be sufficient unto themselves. It is imperative that we blend our publications with all other media and techniques of good school-community relations. Human relations still are the prime factor in good public relations.

Good public relations will only be achieved through a consistent grass roots approach, couched in the idea, "the schools belong to the people, not the people to the schools." Ithaca's program is not foolproof and I hope

that I have offered some practical examples and suggestions for implementing or activating a program for school publications. Remember, no two programs are exactly alike and each school district must tailor the public relations plan to its individual needs. I am sure we have never had a better time for the development of sound public relations in education than today; we have never had so much interest, good or bad, positive or negative, constructive or destructive, than we have at this time in the history of our country. It behooves us to utilize this current "extremist" interest in education towards the end that we bring about an improvement in the child's educational program.

THE COST OF AUDIOVISUAL INSTRUCTION

Paul Abramson, Jack Tanzman,
Robert M. Brown *

Total expenditures for audiovisual instruction in the nation's public elementary and secondary schools were $111.1 million for the 1963-64 school year, rising from $97.6 million for the previous school year.

In both years, the greatest single expenditure was for salaries -- with more than 25 percent of the total going to audiovisual directors, technicians, secretaries, etc.

Expenditures for language laboratories formed the second largest spending category, with $12 million spent for the 1963 - 64 school year -- up from $10 million spent in 1962 - 63. This was despite the fact that in any given year only slightly more than one out of three districts actually spends money on a language lab. The reason, of course, is the comparatively high unit cost of a language lab compared to a film, filmstrip, or a TV receiver.

Films and recordings are still the mainstay of most districts, with almost 80 percent of the schools renting and purchasing film and filmstrips and nearly 70 percent purchasing record players and records.

While expenditures for film, projectors, etc., exceeded $23 million in 1963 - 64 ($2 million more than last year), TV expenditures were far down the list, with only one-quarter of the districts purchasing receivers, to show the lowest incidence of interest (about the same as last year.) This low-level of interest can be attributed to three factors: the lack of educational television within range of many districts; uncertainty among schoolmen as to the proper role of TV in education; and current availability of TV receivers in schools that want and need them. It's readily apparent in many buildings that the first TV set purchased is still being used.

The greatest increase for the period is in the area of overhead projectors. In 1962 - 63, more than half the nation's school districts spent $3.8 million for overhead projectors. The figures were up in 1963 - 64 with 63.2 percent of the school districts spending $5.7 million. This growth might be attributed to the increased interest superintendents and board members have shown in overhead projectors as a teaching tool.

These interesting and somewhat revealing figures are most useful when brought down to the experience of individual districts. School Management's survey was designed to relate the information to school size, location, budget, etc., in examining and analyzing a school's audiovisual program. School's were placed in seven expenditure categories based on net current expenditures per pupil unit (EPU). The categories begin with no. 1, with districts spending less than $200 per pupil, and advance in $50 increments

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* Mr. Paul Abramson is the Editor of "School Management" Magazine whose facilities were used in the survey. Mr. Jack Tanzman is the audiovisual director of the Plainview-Bethpage school system and Dr. Robert M. Brown is an Associate in Educational Communications with the New York State Education Department. The June 1964 issue of "School Management" contain the full survey.

of more than $450 per pupil.

There is no breakdown in district size because, in general, size seems to make no significant difference in terms of per-pupil-spending, except in such entirely predictable areas as transportation and administrative personnel.

Per Pupil Cost

When the audiovisual figures are computed in terms of per pupil cost, they show that less than .6 percent of the median district's budget is devoted to audiovisual instruction. One out of every 10 school districts spent 59 cents or less per pupil on AV instruction in 1962 - 63; it was only slightly better in 1963 - 64 -- 73 cents. At the other end of the scale, however, one quarter of the districts spent at least $3.54 per student during the 1963 - 64 school year. Among the 19 percent of the districts at the high end of the scale, the minimum spent was $5.05 this year.

In terms of regional spending, the median districts in the far western states were the high spenders during both years of the survey. Lowest spending was found among median districts in the midsouthern states. Here, however the schools are far closer to the national median in AV spending than they are in over-all spending.

In terms of wealth categories, it's not surprising to find that those districts that spend more generally, spend more for audiovisual equipment, materials, salaries, etc. It is surprising that 10 percent of the districts in category 2 (spending between $200 and $250 per student for net current expenditures), spent more on AV than the median category 7 districts, all of which have budgets ranging above $450 per student.

The survey revealed that those districts having full-time AV directors spend more on the average than those with part-time or no AV directors. This is understandable, but only part of the story. The survey also revealed that, on a national basis, the median district spends no money on AV salaries, indicating that fewer than half the schools have AV directors or other personnel having specific responsibilities in the audiovisual area.

Among districts that have full-time AV directors, the expenditures per pupil for salaries stayed about the same over the period surveyed -- at less than $1.25 per student. Expenditures in these districts on equipment totaled $1.80 per pupil. The median districts, which spend no money on salaries for AV instruction, spent about $1.91 per pupil in 1962 - 63 -- all of this money going for equipment, materials, rental, and miscellaneous expenses. This spending was increased to $2.02 per pupil in 1963 - 64. The significant point is that the median district, nationally, spent more money for AV tools than did those districts having full-time AV personnel.

Something Amiss

Clearly, something is amiss. Either AV directors are failing to play a proper role in the selection of AV tools for their districts, or the district leaders are failing to use their AV directors properly. It seems that many AV directors have been typed as technicians and tinkerers, rather than as instructional leaders.

In any case, these men are well paid for the job they do. The survey revealed that, among districts that spend money for salaries of AV directors, the median salary paid in 1962 - 63 was $8,375. This median-salary figure rose to $8,700 for the 1963 - 64 school year.

Fully 10 percent of the districts paid their AV directors close to $12,000 in salary during the past year. Hopefully, these men are considered instructional leaders in their districts. That's high tariff to pay for a repairman.

Seventy cents per pupil was spent on AV equipment in 1962 - 63, which was better than 40 percent of the total AV budget. Expenditures for equipment during 1963 - 64 accounted for about the same percentage of the AV budget, but because the budget was slightly higher, the per-pupil expenditure rose to 81 cents.

In both years, expenditures for the purchase of equipment was almost double that for purchase and rental of materials to be used with the equipment. Thus, it appears that schools are supplying themselves with equipment which does not receive optimum use. The survey figures seem to indicate that much of the equipment that is purchased, at least at the time it is purchased, must be used comparatively infrequently, since the district lacks materials to use with it.

These figures seem to indicate that before better use of audiovisual materials is developed, more districts will need to hire trained personnel. But before this is done, it's certainly incumbent on boards, superintendents, and the professional AV persons and organizations to clearly define the job of the AV director. They must decide whether he is better considered a repairman, an assistant superintendent in charge of instructional materials, or a little of both. It's an important decision that needs to be made now.

AUDIOVISUAL TO EDUCATIONAL COMMUNICATIONS:

26 YEAR HISTORY OF A CENTRALIZED AV DEPARTMENT

James Mason, Ithaca

To help you better understand how our Educational Communications Department came to its present status I would like to start my talk with some general background information on the Ithaca City School District and the community where it is located.

The Ithaca City School District is located in the southern Finger Lakes region of New York State. Although referred to as the Ithaca City School District, it actually is a consolidated district. In 1956 the Ithaca Public Schools incorporated 43 rural school districts into the present organization. The present school system occupies approximately one third of Tompkins County and provides facilities for approximately 50% of the student population of the county. The Ithaca City School District presently has a student body of 8300, a professional staff of 470, and 18 schools. The city of Ithaca proper has a population of 30,000 full time residents and, depending upon whether or not Ithaca College and Cornell are in full session, a part time population of approximately 15,000. Education is the community's biggest business. In addition to Cornell, Ithaca College, and the public schools there are two private schools in the community. Ithaca has some commercial and industrial business, however compared to education the number of people employed is comparatively small. As far as residences are concerned, they are fairly typical of upstate New York and include old homes, new homes, apartment housing, trailer parks, etc. Also, as far as the public schools are concerned, here again we are typical in that we have old, new and schools under construction. The instructional program is in a constant state of flux with changes in the curriculum, expanding student body, and the incorporating of many modern technological techniques and tools.

History of the Audio-Visual Department

Now I would like to touch upon the background and history of the present day Educational Communications Department. The first study related to a centralized AV Department was conducted by a PTA group in 1937. However nothing concrete materialized from the study primarily because of the cost factor involved. In 1939 a centralized 16mm silent film library was established. This film library was administered by a committee of teachers and was chairmanned by the vice principal of the junior high school. The original idea for a centralized film library apparently was pushed by the head of the social studies department and the head of the science department at that time. Both men have since left the school system - one to work for the US Office of Education and the other to become a university professor. The year 1946 brought about the centralization of all AV equipment and materials. This center was located in Boynton Junior High School and was still administered by the vice principal of that building on a half time basis. I came into the picture in 1948 when it was considered advisable to have a second part time person involved in the Audiovisual Department, to assist the vice principal who no longer could handle the load by himself. In 1952 the vice principal and then director of the AV Department left the school system to take employment with the federal government. I was appointed director and given a half time clerk. Consolidation took place in 1956 and at that time the director's position was made full time. By 1959 the department had acquired a full time secretary on a ten month basis and a half time equipment serviceman. 1961 saw the addition of a full time serviceman and the appointment of a part time building coordinator for each high schools. The summer of 1963 the Audiovisual Department was re-named the Educational Communications Department and was moved to larger and more modern accomodations. A half time clerk for the Senior High School was added to the department staff for the beginning of the 1964 school year. The decision to change the name of the department from Audio-Visual to Educational Communications was brought about because of the increased amount of new material and technology being introduced into public education. It also was felt that the term Audiovisual had too narrow a meaning for most teachers and administrators. At the present time the Educational Communications Department staff consists of a full time director, full time secretary, full time serviceman, plus a one half time clerk and four part time paid student helpers and three part time building coordinators - one for each high school.

The objectives of the present Educational Communications Department are to provide the entire staff of the school district with all types of communications materials and equipment; to communicate with the staff to let them know what is available through a bibliography, a card file, newsletters, and a handbook; to operate a delivery system to the various schools; to maintain all equipment and materials in serviceable condition, to train a corps of student operators; to conduct in-service training programs for the professional staff and to support the administrative staff in their programs - both in school and in the community. To help you better understand the type of operation we are carrying on in Ithaca, I would like to cite for you a few sample facts and figures. This material covers the period from 1948 to 1964 due to the fact that this is the period that I have been directly associated with the Ithaca system. During my talk these items will be illustrated through the use of overhead transparencies. They will present this information:

District Information on Schools, Teachers, Budget, Students, etc.

1948	1964
9 schools	18 schools
200 teachers	470 teachers
3.771 students	8,200 students
$1,000,000 budget	$8,000,000 budget

Ithaca Communications Department'

1948	1964
400 sq. ft.	3.600 sq. ft.
$6,000 budget	$32,500 budget
20 units equipment	600 units equipment
1 staff	3½ staff
400 units materials	3,500 units materials

Equipment

	1948		1964
6	16mm projectors	52	16mm projctors
1	tape recorder	85	tape recorders
0	overhead projectors	75	overhead projectors
8	2"x2" filmstrip projectors	62	2"x2" filmstrip projcetors
2	opaque projectors	26	opaque projectors

Also at this time I would like to present a portion of the department's annual report to the Board of Education at the close of the 1963 school year.

Figures from 1963-64 annual report

1 - Meetings held - 20	Attendance -	375
2 - Operators trained		80
3 - Use of AV materials 1963-64	Items	6654
4 - Rental and free films	Items	700
5 - Materials cleaned	Items	7000
6 - Materials repaired	Items	1250
7 - Equipment used by schools	Items	10,000
8 - Equipment serviced	Items	960
9 - Equipment repaired	Items	435
10- PA repair jobs		29
11- Public meetings		75
12- Items previewed		230
13- Tapes duplicated		260
14- Transparencies produced		170
15- Community service requests		220

This information covers the development of the department up to the present time.

As to the future developments, we are at the present time preparing to start a closed circuit educational television project. This is being done through the cooperation with the State Education Department, the local community cable owner, and Ithaca College. Shortly an addition to the Ithaca Senior High School will be completed and this unit is to include four additional language labs, a reading lab, and a large group instruction center involving automated equipment. As to teaching machines and programed learning we have been experimenting in this area over the last three years and plan to continue investigating this field. We have hopes of doing work in the 8mm single concept film area. In addition to these specific items we are attempting to keep abreast of all the new developments in many other areas and to pass this knowledge on to the rest of the supervising and teaching staff.

I would like to close by saying that our one primary objective is to try to supply the classroom teacher with the materials he needs to do a good teaching job - when and where needed. I would like to emphasize the word TRY because obviously we are never able to reach a perfect solution. Certain facts of life such as budget, staff, and human idiosyncrasies prevent this.

THE AUDIOVISUAL TEACHER IN THE MORE EFFECTIVE SCHOOL: THE PROBLEMS AND THE APPROACH

Arnold Winegarden, New York City

"New York City's tomorrow is being written in its classrooms today. There are too many children in our community who are growing up without the basic skills necessary for future success as citizens. We believe that these children, properly challenged and given the means for growth and learning, can make unprecedented academic and social progress. To meet this challenge, a new design for education must be created."

The preceding paragraph is the first paragraph in the Introduction of Report of Joint Planning Committee for More Effective Schools to the Superintendent of Schools, New York City Public Schools of May 15, 1964.

Among the salient features of the report are:

1. Integration will be a major factor in the choice of schools for the More Effective Schools Program.
2. The program will provide education beginning at ages 3 - 4.
3. Class size will vary from 15 in pre-kindergarten classes to a maximum of 22 in other grades.
4. Promising modern teaching methods will be implemented under optimum conditions. These will include team teaching, and non-graded blocs consisting of early childhood grades, grades 3 - 4 and 5 - 6.
5. Maximum use will be made of the newest techniques in audiovisual instruction, including closed circuit T.V.
6. Teacher specialists in art, music and other curriculum areas will be used to enrich the instructional program.
7. In order to give teachers maximum time for concentration on instruction, teachers will receive a daily unassigned preparation period and relief from all non-teaching duties.

On page 12 of the Report, in the section Staff Required For Each More Effective School "8 teaching specialists: Art, Music, Science, Corrective Reading (required only in initial stages), Library, English Language Resource (or Non-English Speaking teacher), Audiovisual" is the sentence that propelled me into the Audiovisual teaching position.

After my selection as the Audiovisual Teacher at P.S. 154, Manhattan, I attended an Orientation Session at the Bureau of Audiovisual Instruction.

Here we were given an intensive one day guiding session for the new position.

The next day, I reported to P.S. 154, Manhattan. The principal, Mr. Kahn, started the entire program in the best possible manner. He assumed that the program was to be of the highest professional standard and assured me of the cooperation of his administrative and teaching staff.

The program then started. I wanted to obtain space as the basis of operations of the Audiovisual Program. The best space for me was the large storage room that served as the District Film Library for the entire school district. This large room could hold all the Audiovisual Materials that I would need in my future work.

The first project that I set for myself was a check of audiovisual materials and equipment and comparison with the school inventory. This inventory was most important as the budget for the future materials and equipment had to be projected.

Here was my first shock! Not only did the budget have to fulfill the needs of P.S. 154, Manhattan, but it had to fill the needs of an annex (to be opened later) of twenty-five rooms.

The first step in projecting the budget was to establish a working philosophy that could meet the demands of the four teachers who would act as a team in three rooms. The supervisory and administrative staff had definite ideas in this respect and these were considered in planning the purchase of equipment and materials. The planning was not a solo project. I, as audiovisual teacher, had thoughts of my own, but consultation with Mr. Landsdowne of the Bureau of Audiovisual Instruction and Mr. Nale of P.S. 154, either lead to modification of my plans or strengthening of them.

Materials and equipment of any nature are useless unless the teaching staff wants to use the equipment or materials or wants to learn how to use them. Thus my second problem was that great problem of public relations: how to reach the Staff of P.S. 154, Manhattan.

The obvious means of reaching the staff was present. P.S. 154, Manhattan, has a weekly calendar which is put into the possession of each teacher and specialist of the school. Inserts of professional interest were made by the Audiovisual teacher in the calendar.

The obvious doesn't always work and is not the most dependable means of public relations. The best means is the person-to-person approach. The inventory was the key to this approach. I entered each classroom to check equipment against the inventory and there it was - THE FIRST COMPLAINT. "The machine I have has been out of order for umpteen months." Beautiful words! I took the machine and in two days, it was in perfect order. Magic? No! Just cooperation from the technical staff of the Bureau of Audiovisual Instruction. I had my first satisfied customer. Other followed as the good word spread around.

To be available to the faculty was the next important step. The calendar was the means. I stated that each lunch time would find the door to my storage room open and that I would be there to help in the preparation of materials and to aid in the operation of the various pieces of equipment. The Open Door Policy worked.

When teachers trickled in to the room, they were asked: "What materials would you want?" "What areas of the curriculum would you wish to have?" The answers were added to my list of things to buy or make.

At the grade conferences (so dear to the heart of the teaching profession) I make an appearance and stressed the fact that I was a helping teacher and would gladly obtain materials and equipment for each grade. Repetition, repetition, but this was the way to spread the message.

Slowly, but surely, the other teaching specialists began to come to me or I sought them out. Demonstrations of materials that could be made in an easy manner brought forth many ideas from the specialists.

Teachers are but one of the facets of a school. The Parents are another important part of any effective school. My appearance at a Parents' Meeting in the evening and use of slides of the parents' work and the children's activities made the school many friends and made my work known to the parents.

Therefore, the Audiovisual Teacher had reached the staff, the administrators, the supervisors and the parents. But what about the most important assets of the school: the children?

The children. Despite emphasis on budgetary matters, I found time to have many children involved in the AV program. P.S. 154, Manhattan, has many groups of children in many varied activities. Dramatics, journalism and classroom activities were present. Taping of reports and plays by the teachers with my help was an opening wedge.

The formation of an Audiovisual Squad and an Audiovisual Club, will make audiovisual instruction a part of the curriculum of the school and a part of the learning experiences of the pupils.

At this time of writing, the Audiovisual Teacher has been on the job for twenty-four school days. What problems were present? Let me list them:

1. Inventory checkup
2. Budget planning for a school and its annex
3. Material planning for the future needs
4. AV teacher and faculty cooperation
5. Parent and AV teacher harmony
6. Pupil involvement
7. Maintenance of equipment
8. Helping teachers with AV problems

Many of these problems will be continuing problems. These problems are the ones that make any task interesting. After all, what task can be more interesting than that of preparing "New York's Tomorrow?"

It can only be equalled by preparing "Your Town's Tomorrow."

electronic classrooms

NEW PLANS FOR SCHOOL BUILDING DESIGN

Alan C. Green, Rensselaer Polytechnic Institute

Rensselaer's proposed Communication Center is in response to the problem of rendering the instructional processes in higher education more efficient, and more effective, than they have been in the past. The great concern with efficiency and effectiveness is basically a contemporary problem; likewise, the Communication Center is a contemporary solution resulting in a completely new educational building type.

A single faculty member face-to-face with a few responsive students in a tutorial relationship has been an ideal of educational processes, but it is an unrealistic goal for a large percentage of a college's instructional load. Four concerns of contemporary higher education have rendered the ideal impossible:

1. Shoratage of faculty - The problems of attracting competent new faculty members while retaining existing faculties in face of the competition from other segments of business and industry is a severe problem, particularly for a technically-oriented school such as Rensselaer.
2. Increased enrollments - Not only are there more college age people, but a higher percentage of them are availing themselves of the opportunities for higher education. Rensselaer feels the demands, even though admissions can be limited.
3. Increased costs - Every aspect of higher education from feeding the student to placing a book on the library shelf has increased requiring commensurate raises in tuition and fees. At the same time, there is expanded competition from many areas of society for financial resources so there is great concern with the cost of educating a student. As a private institution, Rensselaer is particularly concerned with educational costs.
4. Expanded and more complex body of knowledge - There is more to teach, more to learn, and it is a more complex and involved body of knowledge that requires carefully planned and executed instruction, especially at Rensselaer with its particular type of program.

Faced with a shortage of faculty and an increase in enrollments, coupled with rising costs and more competition for resources, it is logical for a school or university to turn to large group instruction to handle part of its instructional task. Large group instruction, and the large group can range from 50 to many hundreds of students, allows the most proficient faculty to reach the most students simultaneously. From that standpoint, it is an efficient way to communicate, to inform, and to transmit knowledge.

However, large group instruction may not be particularly effective in stimulating learning responses among the large groups of students involved. This is certainly due in part to the reduction of contact, and hence motivation, between student and instructor.

The development and increased use of instructional aids and media can render large group instruction more effective and it can further increase its efficiency by permitting the presentation of more information than that which an instructor can present alone. Motion pictures, slides, filmstrips and loops, audio and video tapes, models and demonstrations, overhead projection, and television can all be employed singly or in combinations, and each in many different ways, to further render large group instruction more effective, as well as more efficient.

For a number of years, Rensselaer has been exploring the opportunities afforded by large group instruction coupled with careful utilization of aids and media. Experiments in teaching a variety of courses ranging from physics to psychology have taken place in remodeled large classrooms and lecture halls around the campus. All the experimental programs have involved the use of instructional aids and media, and several have been conducted not in a single large space, but in several large spaces inter-connected through the use of television. The experiments with television have resulted in the development of studio and coaxial cable facilities on the campus.

The greatly expanded use of aids and media has been coordinated, promoted, and supported by Rensselaer's Office of Institutional Research. Starting out as Project Reward a number of years ago, the Office has grown and expanded until it now offers film, slide, tape and graphic art services, television production, and multi-media consultation, as well as typical institutional research functions in support of the teaching faculty and administration. An old chapel two blocks from the campus currently inadequately houses the very important functions of the Office of Institutional Research.

Obviously, experimentation with effective and efficient large group instruction involves consideration of adequate facilities and space, and the two concerns have been explored together at Rensselaer. The Troy 101 Project showed how a large classroom could be converted to a completely adequate multi-media large group space seating about 150 students and permitting the implementation of one important television experiment. The Educational Facilities Laboratories - sponsored study called Project DASFEE (Design of Auditorium Studio Facilities for Engineering Education) explored in detail the planning considerations and design criteria for large group, multi-media instructional facilities. The project was conducted and its report "New Spaces for Learning" was prepared by Rensselaer's School of Architecture. With the completion of that study, the School of Architecture then undertook the design, the construction, and evaluation of a mock-up large group classroom following the principles laid down in "New Spaces". The Experimental Classroom has been in operation for over three years and has allowed the Rensselaer faculty to experiment and restructure courses towards improving them for large group instruction by utilizing aids and media.

These experiments have taken place in a facility specifically designed to permit the faculty to make the most extensive possible use of the new technologies. In addition, the Experimental Classroom has allowed the architectural research staff to further evaluate and refine the design of such large spaces, and has permitted educational research as to the effectiveness of this type of instructional process. Through the Educational Research Council the process of experimentation and evaluation goes on.

From this brief review, it can be seen that Rensselaer has been deeply involved in the processes and facilities for large group instruction and has amassed enviable experience on groupings, courses, aids and media, support services, and facilities. All of these things are part of the instructional processes and life of the campus. The program for the Communication Center was based on meeting these needs and the competition reported in "New Building on Campus" was undertaken to bring the talents of six architectural firms to bear on the problem. The concept and form of the Center has been based on real needs defined and refined through research, and interpreted by the architectural talents of six outstanding firms. It is a building ready for realization.

The large group classrooms in the Communication Center seat a total of 1050 students in four rooms of 150 students each and one room of 450. The requirements of shape, seating, lighting, climate, furniture, access and circulation, and equipment for these rooms were developed through the architectural studies previously mentioned. By inclusion of preparation and projection areas each room further supports the use of all media and aids in a variety of combinations and also provides facilities for equipment and technical staff. The rooms allow the instructor wide latitude in designing and structuring instruction to best meet the needs of his course without imposing undue burdens and restraint on his time and energies. They are rooms designed to reduce the frustrations normally associated with technology and large groups.

The capacities for these rooms were determined by analyzing the supply and demand of instructional facilities on the campus as shown by records from the Registrar's office at the time of developing the competition program. Now over three years later, a disposition of sizes would again be analysed before final working drawings are undertaken. It may well be that a different arrangement of group sizes would better meet Rensselaer's present and future needs. The building permits combinations of rooms in the center, or existing spaces about the campus, to be interconnected by television for multiple large group instruction. This, in itself, allows a high degree of flexibility of use and eliminates the restrictions in utilization imposed by a single, very large facility.

The production facilities will house the important instructional support activities of the Office of Institutional Research. The studios and control rooms, offices and conference areas, laboratories and shops, have all been programed to meet the specific needs of Rensselaer both in providing services for those teaching in the Communications Center and for those teaching in remodeled classrooms and lecture halls around the campus. In this sense, it is not a self-contained building, but its functions will influence instruction and its cables and services will reach out to every corner of the campus.

In keeping with the vital role it will play, the Communication Center will be located centrally on the academic campus. Here, it will be most convenient for the large numbers of students and faculty who move to and from it during the school day. It is a large and costly building, but it is a vital building worthy of realization as part of Rensselaer's answer to the concerns of higher education; specifically, it is part of Rensselaer's response to the improtant problem of rendering instruction, and hopefully learning, more efficient and effective.

TAPE DEVELOPMENT AND THE LANGUAGE LABORATORY

Andre Humbert, New York City

In the course of the last few years New York City has followed and kept pace with the modern trend of recognition of the Language Laboratory as an effective tool for instruction in languages. Laboratory equipment has been installed in many schools of various instructional levels -- elementary, junior and senior high -- to serve an increasing number of students, while other electronic equipment such as tape recorders, projectors of the still and motion picture type has helped broaden the scope of audiovisual instruction. The Bureau of Audiovisual Instruction of the New York City Board of Education, familiarly known as BAVI, and the Audiovisual Development and Appraisal Center, AVDAC for short, both guided by the hand of Dr. Edward G. Bernard, have been the agencies chiefly concerned with the task of keeping the New York City schools well in the forefront of developments in, and application of modern mechanic-electronic instructional tools and techniques.

The purpose of this presentation is not the discussion of the electronic gear used within the compass of New York City, nor the consideration of the problems involved in the installing, operation and maintenance of language laboratory equipment. We shall try to depict what the Bureau of Audiovisual Instruction has done, is now doing, and plans to do in supplying the need for suitable taped materials for the language labs for the teachers operating them and for the students using them.

I have just used two fearsome words: "need" and "suitable." To say "need" is to say want, or lack or dearth. It suggests an unsated appetite, like that of a powerful machine which must be fed its fuel if it is to yield the optimum of the capacities that were built into it; if it "needs" fuel and does not get it, it grinds to a stop. Again, "need" is like the appetite of a living, growing organism. Unlike a machine, it will indeed function even on a limited intake of food, but only in a ricketty fashion. Now, the language laboratory is a powerful machine with untold potentials, but for lack of taped materials many expensive laboratory installations have fallen into total or partial disuse; it is an organism, but its further growth is often stunted when its need for a lively and enlivening flow of speech to verify its electronic components does not course generously through its circuitry; it does function and perform, but weakly (no pun intended!) and inadequately.

But not just any materials are needed. They must be suitable. Our imagination must look at materials for the language laboratory with an eye like that of a fine tailor. To suit is to fit; to fit the time, the place, the person; to fit the language, its teacher, its learner; to fit the grade, the course of study, the method; to fit the instructional aims of understanding, reading, speaking and writing the language; to fit the dull wit, the average mind, the bright intellect. I leave it to you to think of additional triptychs!

The Availability of Suitable Materials

There is no gain saying the fact that materials suitable for use in the language laboratory are becoming more and more readily available, and that both their quality and their variety attest a growing awareness on the part of authors and publishers of textbooks and "methods" that the advent and establishment of the laboratory in language learning have created a need which demands special fulfilment.

We have quite generally outgrown the situation where published texts were accompanied by mere "tapings" of the narrative, or the basic illustrative text, or the structured dialogue; by uninspiring recordings of long vocabulary lists, words without context, or of stark grammatical exercises. The earlier taped materials were frequently adventitious accretions to old language textbooks whose high sales to schools prompted the publishers to issue new printings whose salability in turn was enhanced by two factors: The tradition of their classroom use, and the claim that "a full set of tape recordings" had been added "for laboratory use." Both these factors, however, actually militated against the proper and more profitable use of language laboratory facilities since they prevented or at least retarded the development of the special techniques which are peculiarly the key to the success of the lab, by perpetuating the traditional approach to language teaching in a mode utterly unsuited to it. Please do not construe this as an attack on traditional methods, of which I am the stout defender and staunchest of supporters. But as we say in French: "Une place pour chaque chose, et chaque chose a sa place."

Neither the traditional approach nor the language laboratory must be allowed to be destroyed by an unwanted obtrusion of the one upon the other. Both have much to do with successful mastery of a foreign language.

Such then is the rationale of the tape development program embarked upon by the Bureau of Audiovisual Instruction.

First, through the agency of its supervisory staff, it offers publishers of laboratory-oriented materials the opportunity to submit for appraisal their texts, recordings, films and filmstrips or slides. If approved by committees of language chairmen and teachers, the materials are listed as available for purchase and use by the New York City schools. Thus the best in up-to-date audio material is procurable by any school, whether equipped or not with full lab facilities, for much of this supply can be used in the classroom with tape recorder, phonograph, still and/or motion picture projector.

Yet, for all the good to excellent materials thus procurable, the Bureau of Audiovisual Instruction and the Director of Modern Foreign Languages have felt and feel that more still could be done to offer the Foreign Language Teaching staff and student body of New York City laboratory oriented materials of a more precisely tailor-made nature. By that I mean a program of tape development designed to meet the particular needs represented:

1. by the various divisions -- the elementary with its F.L.E.S. (foreign language elementary school) program, the Junior High, the Senior High, all with their courses of study of the first through the fifth levels (a 5-year program of foreign language study);

2. by the State Regents examinations;

3. by the college entrance tests; and

4. by the broad spread of textbook titles still in wide use, but devoid of accompanying taped materials; and so on and so on.

In one special application, this tape development program dealt with the State-subsidized Research Project which was designed to study the effects of the language laboratory on language learning and reported its findings, Mrs. Sarah Lorge has already addressed herself to this particular phase of the BAVI tape development program.

The tapes developed at BAVI were then and continue now to be of wide variety. They range from the textbook-based type to the multilevel cultural and informational; from pronunciation and intonation drill tapes to structure-drill tapes; from auditory-comprehension lesson tapes to straight Regents-type auditory-comprehension passages, with questions and distractors, all at various levels of difficulty designated as elementary, intermediate and advanced. Poetry and prose readings are presented, informal conversations among native young people, as well as structured dialogues in which participants are again native children. It must be stated in passing that most of this tape production has largely been embodied in French, but since the termination of the research project, all of the other major languages will receive due consideration.

Constant attention is given in the preparation of all these laboratory materials to keeping them closely harmonized with and related to the classroom work, so that on the one hand the students realize that what is accomplished in the lab has direct bearing on class work, and on the other they can remain confident that the time spent in the lab shall not impair now or later their grades or progress in their language major. Thus is achieved a fusion of class and lab which professor Gustave Mathieu has dubbed the "clab."

Another vital factor, namely active student participation, is attended to in BAVI tapes through the use of several different techniques:

1. Listening to readings of varying length, recorded by native voices.
2. Oral responses by student in the different modes.
    - a) simple repetition of what is heard.
    - b) answering in the foreign language questions posed in that same language.

It is in connection with this particular way of eliciting student response and way of eliciting student response and participation that BAVI devised a new technique, that of the prompted answer. It was discovered in actual lab practice that rather too frequently some students were entirely unable to frame an answer, or did not have sufficient time within a given pause to react to the question, compose an answer and express it. This led to the adoption quite recently of the prompted answer technique. Its continued use shall depend upon reports from teachers in the field as to its effectiveness and validity. Here is how it sounds with a student actually recording....with only moderate success.

3. Written responses:
    - a) regular dictation in the traditional 3-step approach of consecutive reading for comprehension, phrasing in breath-groups with pauses for writing, rapid third reading for checking and correction.
    - b) dictation of a list of numbered words which student writes in a column. Then he hears a second set of words not in any numbered sequence, made up of synonyms or antonyms of the

first set; time is allowed for recognition of each word, for matching it with its mate and writing it in paired relation.

c) dictation of short, simple sentences meaningfully related to a previously read or studied text. Each sentence, however, as heard from the tape contains one wrong word, for which student must recall from the earlier reading or study the apt substitute before he writes the sentence.

d) dictation of true or false statements based on text; student is given time to repeat the statement and to write "c'est vrai" or "c'est faux."

e) dictation of a number of incomplete statements based on text (let us say five). When all five have been written, six completing phrases are heard from the tape, not in the order of the first five. Student must properly match five of these with the first phrases, being alert enough not to write one of the six statements which is purposely incongrous.

The techniques just described are of course most suitable for taped materials based on some kind of text-reader, selected literary passage, poem, basic structured paragraph, etc.

Other procedures are called-for and used in BAVI produced tapes that deal in structural patterns and linguistic forms, whether these be of verbs, of grammar or of idioms. Drill techniques in this area are familiar to all, and many of them have been incorporated in the course of study booklets issued by the Division of Curriculum Development. They are, in the main,:

repetition of meaningful utterances containing the target pattern and couched in vocabulary of the given level;

substitutions of person, of number, of gender, of tense, of mood, of synonyms, of antonyms;

transformations of model utterances from singular to plural, affirmative to negative, declarative to interrogative, all conversely of course;

responses to questions so patterned as to elicit answers that strike repeatedly at a specific structure or form; and finally

translation drills in those speech patterns of foreign idiom which are at great variance with corresponding patterns in the student's native tongue.

In the currently going and planned development of tapes for the language laboratories in New York City public schools, the Director of Modern Languages, Dr. Emilio Guerra, has recommended that the highest priority be given to the production of materials bearing on the important linguistic structures outlined for study at all various levels of instruction. Progressively, all such patterns will be the object of special drill tapes of the types suggested in the courses of study in seven languages. The order of priority in the languages has also been set by the Director and will be as follows: Spanish, Italian, Hebrew, Latin, Russian, German, French. The lowly position held by French in no way reflects discrimination against la Belle France; it is simply due to the fact that to date French has copped the lion's share of laboratory tapes.

So, with all due respect to Dr. Emilio Guerra, I say, in reference to his priority decision: "A la Guerra comme a la guerra!" which freely translated would mean, "All's fair in love and Guerra!"

THE CLASSROOM COMMUNICATOR

David M. Crossman, State Education Department, Moderator
Captain Frank O'Brien, West Point Military Academy
Alan Ramm, Westfield Academy

In the Spring of 1962, the New York State Education Department became interested in a piece of equipment designed to automatically provide for student response in the classroom. Through a series of small, individual student consoles it was possible for each student to electrically respond to a multiple choice item or any other type of dichotomous response. Facility was also provided for permanent recording of these responses together with summation metering to obtain group data for each response.

This equipment was installed in the East Greenbush Junior High School and placed under the supervision of two teachers who had spent a summer session at the University of Rochester schooling themselves in programing techniques appropriate for the use of this equipment. In April of 1963 the project was prematurely terminated because of malfunctioning of equipment.

Later in the year the Department purchased a second system manufactured by the Telepro Corporation and subsequently entertained proposals from a variety of schools in the State. This equipment was installed in February 1964 in a classroom of the Westfield Academy.

A newly engineered system to replace the one used in the East Greenbush Junior High School was obtained and was installed during November of 1964 in the West Canada Valley Junior-Senior High School. We shall have a report on that experiment at the Convocation next year.

In addition to our own experimentation with classroom communicators, the West Point Computer Center has become involved with a similar system manufactured by the Edex Corporation. This 40 position unit was delivered to the Academy 3 months ago where it will be used for both group and individual instruction in teaching computer programing.

We have asked Captain Frank O'Brien, who is Asst. Director for information at the Computer Center, to comment on plans for their use of the Edex system at West Point.

O'Brien:

The plebe or freshman class at West Point reports to the Military Academy during the first week of July each year. From July until Labor Day the class engages in a rather vigorous introduction to military life and in particular cadet life. The collegiate nature of West Point does not become apparent until this initial two months of training is completed and the new cadets are assigned to permanent organizations within the Corps of Cadets.

The plebe or freshman academic program begins immediately following this reorganization. Although the rigors of plebe year are far from over at this point, the new cadets more or less settle down to a freshman collegiate academic program.

All instruction at the Military Academy is conducted according to the Thayer System of education, that is, daily recitation in each course of instruction. This is accomplished by making each cadet class consist of fifteen or less students with a qualified instructor coordinating recitations, emphasizing the essentials of the lesson and clarifying portions where students experience the most difficulty.

One of the first subcourses the new cadet is exposed to is a six-hour block of instruction on the digital computer. In this course the cadets are taught to program in a machine-oriented language as opposed to a problem-oriented language such as FORTRAN.

A machine-oriented language was chosen over the other type to insure that the subcourse was compatible with the mission of the United States Military Academy. The more detailed reasoning behind this selection is of no consequence for this discussion. Needless to say a machine-oriented language, although an excellent tool for explaining the mechanics of a digital computer, is cumbersome as a problem solving tool. Many of the cadets, especially those in advanced courses or on special projects, have recognized this limitation and have requested information on problem-oriented languages to equip them with a tool to better handle the particular task assigned them.

With all our formal computer instruction we are slanted rightfully toward the internal workings of the machine. The Academic Computer Center assumes the responsibility of disseminating information on problem-oriented languages with a minimum of administration, with minimum inconvenience to the cadet, on a strictly voluntary basis and most important of all with no interference with the formal courses of instruction.

The classroom communicator, it is felt, can help meet this need. By having a canned course of instruction on a problem-oriented language, requests, by individual or groups of cadets, can be met as they arise.

Plans are to have the classroom communicator in a semi-permanent classroom environment when being used to instruct a group of about six cadets or more. When not being used to instruct a group, the machine will be kept in a recording environment so that additional courses, as they become available, can be placed on the machine. In addition, as individuals request information, the machine will be available to them at their own convenience. A qualified instructor need not be present while cadets access the machine. It is expected that the operators in the Academic Computer Center can be available to operate the equipment in addition to the duties they are now performing.

Unfortunately we have little experience with the classroom communicator. In addition to the plans I've outlined other areas of considered use have naturally occurred. One area, which may be unique to West Point, is that of additional instruction. This instruction, although voluntary for cadets who feel they need clarification of a particular day's lesson, becomes mandatory once the cadet indicates a desire to attend. A qualified instructor is then, made available to conduct additional instruction for that day. This instruction is carried out, in a rather standard format, each day. It is conceivable that the classroom communicator could be used to handle this type instruction. The proponents of such an idea point out that the best instructor could be used to place the material on the machine. This is one area where we feel we have limited experience. The instructor who may be excellent in the classroom environment often loses some qualities when giving instruction without physical contact with the student. Many of you may have experienced this same condition when comparing live instruction to instruction given over television. Much the same seems to be true with the classroom communicator.

One other difficulty seems to be apparent at this early point in our use of this type equipment. That is, time of preparation. Although an hour of regular classroom instruction requires a large amount of preparation, an hour of programmed instruction seems to require much more. The reason for this seems to tie in with what I was speaking about earlier when I said the excellent instructor often appears bland when giving a prerecorded lesson. The gestures, pauses and other techniques that make live presentations extremely effective often appear forced or unnatural in a prerecorded sequence of instruction. As a result the instructor not only has to spend a great deal of time becoming familiar with his subject but also with the detailed format of his delivery.

So much for immediate future plans for the classroom communicator. West Point is about to embark on a test to study the use of remote terminal access devices to the computers now installed. The plans at present call for testing these devices as remote computational facilities. In practice we hope to show that a number of these terminals can "time share" the computers at the Center. To the operator at the terminal it will appear as though the system is paying attention to only him when in actuality the system is serving a number of these devices sequentially but, of course, extremely rapidly.

West Point is aware of the possibility of using these devices as a sophisticated teaching system where a number of students could sit at the remote terminals and deal-up or type-up requests for instruction in some particular area that they felt a need. No plans for this type operation are being considered, and I merely mention it to show West Point is making every effort possible to stay abreast in this field of education to insure that any phase that is applicable to our particular needs is not overlooked.

THE CLASSROOM COMMUNICATOR AND ELECTRONIC SCORER

Robert Bell, Bell Educational Laboratories

Introduction

The problems of the teachers in our schools, colleges and universities have become increasingly more difficult and complex in this era of rapidly increasing knowledge. To increase efficiency and utilization of the teacher's time, many innovations have been introduced into our educational programs-- closed circuit TV, educational TV, slide and filmstrip projectors and overhead projectors--to name a few. Another important advance has been the acceptance of the principle of the multiple-choice question, which has been adopted in almost all branches of the curriculum for testing and evaluating student achievement and knowledge. This type of questioning makes possible the adaptation of modern electronics in the form of classroom communicators to aid and assist the teacher, as will be presently described.

It is extremely important for the teacher to be immediately aware of the comprehension and understanding of the subject matter being taught, not only by the class as a unit but by each individual student. To find out several days or weeks afterward, when an examination is given, that the students did not understand the lesson, is much too late. There is no time left to go over the material again. The results of such a situation are obvious.

What is needed in the classroom is the means for each and every student to respond to pertinent questions concerning the subject matter being taught and for the teacher thus to realize at once whether the students are really grasping the ideas he is trying to explain. The MONIT-SCORE provides this means. In addition, it provides scoring and highly useful evaluation techniques as will be demonstrated later.

WHAT IS THE MONIT-SCORE?

The MONIT-SCORE is an integrated electronic system which permits a thorough evaluation and analysis of the students' comprehension and knowledge of any subject matter in a classroom or lecture hall situation.

It provides:

1. A means for each student to indicate his selected answer from a group of possible answers,
2. An indication to the teacher of the percentage of students registering answers to each of the possible answers,
3. An indication to the teacher of the specific answer selected by each student,
4. A permanent record on a strip-chart of the answers given by each student to each question,
5. A means for assigning variable credit or points for the correct answers to each question,
6. An accumulated score for correct answers to the questions for each student, and
7. A printed record of the accumulated score (or grade) for each student.

HOW MONIT-SCORE OPERATES

The MONIT-SCORE has the following modular components:

1. Student switch boxes (30 for standard classroom model),
2. Teacher console with meters and controls,
3. Light array panel mounted on teacher console,
4. Control console for scoring modules, equipped with controls and dial for point assignments,
5. Strip-chart recorder which indicates how each student answered each question, and
6. Student counter module which totalizes score for each student and provides printed record of each student's score.

Each student box is provided with a knob by means of which the student by rotating the knob can select one of five positions, A, B, C, D, or E as indicated on a recessed dial. No one except the student can see the position chosen. The position selected is the student's designation of his answer from the two or more multiple-choice possiblities.

On the teacher's console are mounted five meters, the dials of which are calibrated from 0 to 100 per cent. The meter readings indicate the percentages of the students that have answered A, B, C, D or E to the multiple-choice question. The teacher can see at a glance the percentage (or number) of students who have answered correctly, as well as the percentage who have selected each of the other incorrect answers.

Mounted on the teacher's console is an interchangeable panel with a series of green lights arranged in a geometric pattern according to the seating arrangement of the classroom. There is one light for each student. By depressing an illuminated button on the console, the teacher can observe which students have answered A, B, C, D or E, in turn as he changes the position of his "answer" dial. He can thus ascertain which students have answered correctly as well as what incorrect answer each student has selected.

The above description comprises the student-teacher monitoring section of the MONIT-SCORE. It can be used in daily classroom work as a classroom communicator.

When scoring or evaluation of student achievement is desired, the "scoring" modules of the MONIT-SCORE are employed. The scoring control unit is plugged into the teacher's console. Then, either or both, of the scoring modules are connected to the scoring control unit. In regular operations these scoring modules would already be interconnected and the combined system mounted on a cart which could readily be wheeled into the classroom when required.

The scoring control unit is provided with a switch which can be turned to (1) "correct" answer or (2) "all answers" position. When the scoring record button is pushed the strip-chart module will record on the chart (1) an indication for each student who has selected the correct answer, or (2) an indication of what answer each student has selected. After scoring the first questions, the chart automatically moves into position to score the next question. If method two of recording is chosen, the chart then becomes an actual permanent record of the entire examination for each and every student in the class.

Mounted on the score control unit is a "telephone" dial which operates the student counter module. The teacher turns the "answer" dial on the teacher console to the correct answer and then "dials" in the number of credit points for the correct answer to the particular questions. The counter for each student who has answered correctly registers the number of points dialed. The dialing is continued for each question until the examination or scoring period is completed. Each student's counter then indicates the total accumulated number of points for all of his correct answers, or in other words, his total score for the examination.

The "reset" button is then pushed and the scores for every student are printed on a single tape which becomes a permanent record of the score or grade for the examination or scoring period. The printer prints the student's number and, opposite the number, his total accumulated score. When all scores have been printed, the unit resets all counters to "zero", ready for the next examination.

For the convenience of the teacher there is a counter on the score control unit which indicates the total number of points assigned for the answers to all of the questions. Stated another way, this counter indicates the total number of points possible for any student who has correctly answered all questions -- a grade of 100 per cent.

It should be noted that the student-teacher monitoring system is completely operable throughout the scoring process. The meters continue to indicate the percentage of the student answering A, B, C, D or E. Also the panel continues to display the lights for each student who has answered correctly. A manual record can be made of the percentages of students answering each question correctly, or for that matter all of the meter percentages for each question.

What The Monit-Score Will Do

From the description of the MONIT-SCORE and how it operates, it is evident that a whole new approach to student-teacher evaluation is possible. The teacher, by asking a series of suitable multiple-choice questions for each of the pertinent sections of his regular teaching program, may ascertain at intervals during the lesson the understanding and comprehension of the students, individually and collectively as a group. The system makes it mandatory for each student to answer each question. Full participation by the entire class is assured. The timid or unresponsive student can answer the questions without fear of intimidation or derision from more aggressive students.

If the correct responses from the class as a unit is below what the teacher deems to be appropriate, say 80 to 85 per cent, the teacher can immediately review the subject matter, perhaps in a different fashion, for clarification. The performance and understanding of individual students, perhaps the slower learners, can be monitored by the lights on the light panel.

It should be noted that there is no need for the teacher to change his regular presentation. The only deviation from normal procedure would be the interspersion of multiple-choice (or true or false) questions at appropriate times. Preparation of such questions would, of course, be necessary, but this should present no problems. In fact, this should be helpful to the teacher. It is further evident that the teacher now has available through the MONIT-SCORE, the means for analyzing and improving his own presentation. He can select those procedures and explanations which the students, through the monitoring system, most readily comprehend.

Homework has always been an area of contention, quite often because the work was not graded or even reviewed by the teacher for the lack of time. However, the subject matter or the homework may well be covered in subsequent examinations. By asking a few well-chosen questions just after class convenes, the teacher may determine if the students have actually done the homework and whether or not they have understood the content of the assigned material. Clarifications can be made at once if the student responses indicate that such are needed.

Grading of examination papers has long been a tiresome drudgery for the teacher. The time thus spent is inordinately long compared to that available for lesson preparation. The MONIT-SCORE provides means for reducing this time to a bare minimum. The scoring modules permit the teacher to:

1. Score the achievement of the students during normal classroom work, or
2. Score a regular examination, or
3. Evaluate the student's achievement over any period of time.

Written examinations, or any portion of an examination, the questions of which can be answered from a series of multiple-choice answers, may be scored before the class is actually dismissed. The examination may be handled in one to two ways:

1. Asking each question and receiving and scoring each student's answer, one question at a time, or
2. Permitting the students to answer all of the questions on his paper (regular duplicated examination paper) and then just before the class is dismissed, the scoring of the examination can be accomplished.

In the first case, the number of credit points for the particular question can be "dialed" into the scorer unit immediately after each question. For the second case, the teacher will ask each student to indicate his answer (from his paper) to each question inturn. The prescribed number of points for each correct answer can be dialed into the scoring unit in turn. Thus a printed record of each student's accumulated score can be obtained in a matter of three of four minutes. The examination is actually graded before the class is dismissed.

The strip-chart module, as mentioned previously, provides a record of (1) the correct answers for each student, or (2) how each student answered each question. This strip-chart record is then a condensed version of all the examination papers for the entire class. It is possible to determine the score of each student from this chart by summing up the points for each correct answer. This process can be accelerated by means of an available strip-chart viewer. This strip-chart contains all the information necessary for a complete analysis of the examination. It will permit:

1. The determination of the total score for each student,
2. The achievement for each student for any section of the examination,
3. The number of students answering correctly for each question,
4. The number of students selecting each possible answer for each question (the number selecting A, B, C, D or E for each question), and
5. An analysis of the examination itself to determine the appropriateness of each question.

As stated previously, the strip-chart recorder or the totalizing counter unit may be used separately or both simultaneously. Although the accumulated score can be obtained from the strip-chart, the printed total score for each student from the counter unit is a great convenience for the teacher.

To summarize, the MONIT-SCORE has been developed as an integrated electronic system wherein;

1. The teacher may use to determine whether the students, individually or collectively, are understanding the subject matter of the lesson as it is being presented.
2. The teacher may use to review homework and course content material prior to achievement or regent examinations.
3. The teacher may obtain scores and records of examinations before the class is actually dismissed.
4. The teacher may procure data for a complete analysis of the students' achievements in classroom work and in examinations.
5. The teacher is assisted in improving his classroom presentations and permit him appreciably more lesson preparation time throughout the reduction of work for grading examinations.

STUDENT RESPONSE SYSTEMS AND TRAINING

C. Robert Love, EDEX Corporation

In Los Angeles a bus driver, deep in concentration sees a red sports car careen dangerously in front of his bus and he reacts. In San Francisco a bank executive wrestles with a company's financial record trying to decide its cash position, and he reacts. An unemployed laborer in Lansing, Michigan, decides that bosses have feelings like other people and he reacts. What do these people from widely divergent walks of life all have in common?

The bus driver, the bank executive, the laborer are all participating in a revolutionary approach to training. There was no sickening rending of metal and shattering of glass between the bus and the sports car. The driver didn't hit the brakes or spin the steering wheel to avoid the crash. The near miss was being reproduced before him and his fellow drivers on 16mm motion picture, wide screen and in color. Immediately before the point of impact the motion picture projector automatically switches off and a still projector switches on with a question to the drivers, "How could you have prevented that accident?" The drivers study the alternatives offered and signal their decision by pressing a button on a small response device on the table in front of them. The classroom instructor watches a small display panel on the teacher console before him. Satisified that 100% of his class recognized the hazard before it developed and took proper preventative action, he congratulates the class and tells them that they all scored another 10 points on the machine-presented program.

The situation just described, like the one involving the bank executive and the laborer, is part of Greyhound Corporation's new professional driver safety program developed by EDEX Corporation of Palo Alto, California.

Greyhound introduced the program in their western operations about 2 years ago. Their safety record was excellent; nevertheless, they were concerned about maintaining a high degree of interest and participation in their safety training program on the part of their drivers. The EDEX Teaching System appeared to provide the spark they were looking for.

Using this student-response approach offered several advantages to their safety training staff. Real-life situations could be replicated in the classroom. The training could be standardised and presented with a minimal amount of effort being expended by their instructors in presenting information--the system does this automatically. Because the instruction is carefully designed and prepackaged, it is relatively teacher-proof. That is, it does not suffer at the hands of the instructor whose energy begins to fade at the end of a hard day, nor does its quality diminish noticeably with the varying abilities of the instructors.

Most important from a learning standpoint was the revelation that the trainees, including drivers with years of driving experience, maintained a high interest level throughout the program. Anyone who has had the difficult task of maintaining interest during a safety training program will agree that it is a chore that will exhaust even the most talented professional. Unlike traditional safety classes where the trainees sit passively through a lecture or a film, in Greyhound's classes the drivers are busy every minute, evaluating situations, making judgments and decisions and expressing opinions.

The two-hour professional drivers' safety program was developed around freeway and intersection situations with heavy emphasis on following distances. To achieve a sense of reality the motion picture camera, fitted with an anamorphic lens to give a wide view, was mounted directly behind the driver and was aimed over his shoulder. Because a sense of reality was important, few scenes could be effectively staged. However, the Greyhound-EDEX crew found that the busy California freeways provided an ample variety of potential accident-producing situations with no prompting of amateur drivers required.

To keep production costs down EDEX uses a two-projector technique to present questions and give reinforcing answers. The EDEX console responding to pulses on 1/4 inch magnetic tape automatically switches from motion sequences, to still question frames on cue. Even the scores for correct answers are preprogrammed on the tape.

The management of Greyhound felt that the results of Western Greyhound Lines experience with this program were sufficiently good to warrant the extension of the program to cover drivers in Central, Eastern and Southern Greyhound Lines.

The case of the bank executive differs from that of the bus driver in many respects. The content material to be taught was factual rather than attitudinal in nature. The training department of the Bank of America was faced with some fairly typical training problems. Their trainees varied in age from recent college graduates to older executives with long tenure. They were concerned about how to teach more information without increasing their training time appreciably. Standardization of instruction was needed between their Northern and Southern California headquarters.

Both in-house and outside instructors were to be used. So, like Greyhound, their material had to be fairly teacher-proof. Their instructional program involved two courses; one in basic accounting, the other in financial statement analysis. The accounting course, in addition to homework, involves four full days of classroom work given one day each month for four months. During each of the four, one-day sessions, the trainees spend about two hours using the EDEX System.

The financial statement analysis program runs for a full week of about thirty-two instructional hours, ten hours of which the trainees use the EDEX System. In the latter program, the Bank of America's training department uses an unusual approach, W. D. "Bud" Robertson of the bank's training department refers to it as "programming the instructor."

By its nature and design, EDEX can be described generally as a linear machine. Linear in the sense that the machine does not automatically direct itself into what Dr. Norman Crowder refers to as branching. A typical EDEX sequence is:

Instructional Step(s)
Question
Automatic Scoring
Reinforcement Material
Next Instructional Step(s)

In this method of instruction all students are given the reinforcing material. This can vary, depending on the type of program, from simply informing the class of the correct or desired answer to providing review information and the rationale behind the correct response.

Because the display panel on the EDEX Console shows the distribution of responses in percentage of the group for each choice offered, the instructor can exercise the option of letting the program proceed (in cases where the majority answer correctly) to stopping the program to give additional instruction (where the majority failed to answer correctly). To make certain that this happens the machine is programmed to stop after nearly all of the question frames. The instructor's task is to read the four percentage meters and if all is well, he simply presses a start button and the lesson continues.

Mr. Robertson points out that this approach has another advantage. The Bank of America, like many other users of this student-response system, finds that this kind of student-active teaching can be heavily concentrated. The trainee really feels that he is being pushed and while the tape can be programmed for varying response times, the frequent stops tend to ease the pressure.

Robertson believes that this feeling of pressure or of being pushed is good. From his management's point of view, the trainees are there to learn as much as they can in the shortest possible period. To date, instructors have detected no evidence that this sense of urgency stands in the way of learning. To the contrary they are quite satisfied with their results and report that both the instructors and the trainees are pleased with this approach.

Another unique application of the System used by the Bank of America training department permits the use of the constructed response. Prior to the advent of programed instruction "constructed response" was called writing an answer.

In this application, financial information from a company's records is projected before the class. The audio track on the sound tape instructs the class to depress the "D" button on their responders, then they are to extract the appropriate information from that being projected on the screen and enter it in the appropriate column on the financial spread sheet which each student has on his desk before him. After each student has made the entry on his sheet he is instructed to signal this fact by pressing the "A" button. The tape on the EDEX System stops, leaving the projector on. When the last student in the class has made his entry and cleared his responder the EDEX System automatically starts. The projector then advances the film to the next frame and the student is asked to compare his entry with the one shown on the screen.

According to Mr. Robertson, the training people look at the System as another instructional tool. They are pleased with their results to date and are planning additional programs involving its use in international banking, orientation for new employees and have used it as a briefing tool for public relations programs.

Two very different approaches are used by Greyhound and the Bank of America in their physical handling of the System. The Greyhound Company uses the System on a portable basis. Each instructor carries the equipment in a station wagon from city to city until he covers his area. The Bank of America uses two permanently wired classrooms; one in their San Francisco headquarters and one in Los Angeles. Rather than take the classroom to the student they bring the student to the classroom.

The case of the unemployed laborer in Lansing, Michigan involves the use of the EDEX System in adult literacy programs. According to Secretary of Labor Wirtz, the Lansing Job Training Center is one of 64 experimental and demonstration projects approved by the U. S. Department of Labor's Manpower Administration.

The initial goal of the JTC demonstration program is to develop language literacy, develop and improve computational skills and develop cultural understanding to a point where those who complete courses successfully can undertake vocational training. The ultimate goal is the successful completion of institutional (classroom) vocational or on-the-job training to render trainees employable.

In July, just two months after the Job Training Center began, the (Lansing, Michigan) State Journal reported the following description of the use of the EDEX System in this project:

"In addition, (to the use of conventional teaching methods) modern teaching aids are being utilized. Recently installed was the EDEX System for instruction in reading, arithmetic, spelling and other elementary subjects.... This device makes possible instant grading of the performance of all the students in the classroom. A projector, utilizing either movies, filmstrips or slides, flashes the lesson units on the screen.... Each student gives his or her answer by pressing an individual "responder" button. The grades are indicated on the Console or control board.... Enthusiasm and eagerness are written in the faces of the trainees. No matter their age, they enjoy scoring well on tests. Their faces light up when they respond with the correct answers."

There are several factors at work that produce this kind of a response from the sub-functional or functional illiterate when they are exposed to the EDEX Systems approach. To many learners in this category the traditional classroom concept represents to them a scene of prior repeated failure.

To others, returning to the classroom after reaching adult maturity seems childish and evokes from them a sense of shame. To some it is a completely foreign and bewildering experience.

The very presence of the hardware itself has great impact on these learners. To them it is the very latest in technology; in a sense, it conveys a message that someone cares enough to provide them with the ultimate in instructional technology. To keep this Hawthorne effect alive and working to an instructional advantage, it is necessary to design the materials first to the needs of the adult mind. Chances for success must be designed into the material in such a way that it is difficult for even the slowest learner to fail. And, of course, the infinite patience of the System, which never tires, never diminishes the quality of the presentation, is another favorable factor.

While it is still too early to point to well documented evidence concerning the success of the Lansing project, all indications would tend to show that it will be highly successful. At the same time, other programs are in various developmental stages in Indiana, Flint, Michigan, North Carolina and in California - all involving the use of the EDEX System in basic education for adults.

The three case histories referred to in this report are fairly representative of the more than fifty locations around the United States where EDEX Teaching Systems have been in use over the past three and a half years. The EDEX Corporation, located in Palo Alto, California, has established itself during this period of time as a leader in providing a Systems approach to instruction.

By definition, a systems approach suggests a series of closely related components functioning in an orderly fashion toward a common goal. This in turn suggests that a number of variables be reduced to a bare minimum.

There is a number of variables at work in conventional instruction. A broad assortment of materials and devices are at the disposal of the teacher. This is a random assortment that can be selected at random by the teacher. Their use varies from actual teaching, to enrichment, to merely being used to fill in time.

The next variable is the teacher himself, whose effectiveness varies from teacher to teacher, from day to day and from hour to hour. Student interest varies from active participation to total passivity. To measure instructional effectiveness, the teacher relies on a number of conventional feedback mechanisms. These may include a show of hands, discussions, projects, papers, tests and quizzes.

The intellectually alert students depicted here as the active students, might respond to all of these mechanisms. With the exception of tests and quizzes, which are offered on a delayed after-the-fact basis, an increasing and alarming number of students do not respond to these mechanisms.

How can a systems approach improve this situation? First, the teacher's action must be considered as being an integral operant within the system; his first function involves curriculum design.

By that we mean that the materials and devices to be used in instruction are carefully ordered to perform specific instructional tasks. All components of the system are highly directional, aimed at pre-determined terminal behaviors. Through the presentation side of the mechanism, carefully prepared materials are presented to all students.

All students are required to report to the feedback side of the mechanism by means of a responder. By the use of frequent interrogation controlled by the presentation side of the mechanism, all students are necessarily active. There can be no passive students on the system without their being immediately identified by the teacher.

Given this constant flow of information about the group as a whole, irrespective of size, and about each student within the group, the instructor can make valid judgments about curriculum, and do those very human things teachers should do--counsel, guide and tutor according to the identified needs of the individual, whether they be bus drivers, bank executives or illiterate laborers.

educational television

NONCOMMERCIAL EDUCATIONAL COMMUNICATION SYSTEMS FOR THE PUBLIC SERVICES

John W. Nystrom, Assistant to the Undersecretary of H.E.W.

The call for a Great Society issued by President Johnson marks the beginning of a major movement of great consequence to education.

Using resources gained from an expanding economy and reduced defense costs, we may expect the gradual extension of the educational process into every sector of American life as we work to end poverty and elevate our national life. Educational broadcasting must expand its horizons in preparation for the new challenges.

Television is being used effectively to assist in meeting needs for formal education and to provide cultural enrichment for the comfortable--the educated person with sufficient income and an easy relationship to the world. Successful experience in these program areas should encourage educational broadcasting to look now to expanded service to help meet all types of human needs and assist the whole community. In saying this I repeat a thesis which I have expressed several times over the last six months, most recently at the convention of the National Association of Educational Broadcasters. But it calls for action on the part of educational communication specialists over the whole of the Nation.

I direct my attention today to those in television and radio because they usually have some control over service policy and can provide some direction in its development. The expanded service proposed here involves a shift in direction requiring basic management decisions.

But to the audiovisual specialist, let me say this. Many community services need your services to improve the efficiency and effectiveness of their operations. However, they are often--but not always--even less aware of the benefits to be gained from audiovisual application, including programed instruction, than they are of the benefits to be gained from the application of closed and open circuit television, radio, and voice circuitry. While a radio or television station can initiate proposals which may benefit the public service, the audiovisual specialist must usually leave initiative to the agency.

The contribution which can be made by the audiovisual professional at this point, probably requires some form of group action. It represents a professional responsibility. One which might well be assisted by industry in their own interest. The use of audiovisual resources, where effective, by all the various community services involved in the educational process would greatly expand the profession and increase its potential for service to the Nation. A review by the audiovisual professional of the growing body of legislation calling for innovations in health, welfare, and community services is well worthwhile for it can stimulate thinking by one familiar with communication media and can expand his concept of his role in the education process of the Nation.

Review by the educational broadcaster of community educational needs will show that the primary responsibility for service is often assigned outside the organized apparatus of education. It will show that there are substantial audiences to be served, established professional agencies committed to the service, and operating funds that are often substantial. Also, he will find a wide potential for educational broadcasting.

Broadcasting services to meet community needs can take at least three forms:

(1) They can be directed to serve basic individual needs including: programs to provide mental health information, counseling to parents of the retarded, or community development information; programs to combat social problems, such as alcoholism, juvenile delinquency, illiteracy; programs to bring special ethnic groups into the main stream of our society, strengthen our civil defense system, save lives in time of disaster; programs to prepare people for the problems of aging and make life adjustment after 65 easier; programs providing nutritional information or preventive medical information especially in areas, both rural and urban, where life is shorter.

(2) Broadcasting services can function to support the management of public services and increase effectiveness. The experience gained in professional education, such as the training of nurses and the continuing education of doctors can be called on to assist in the in-service training of all types of public servants. In addition, there are the new job categories now being created by our social agencies such as Health Assistant or Homemaker and which will provide livelihood for hundreds of thousands in our society. The development of these categories, badly needed by underemployed persons, is limited essentially by the training problems, not by the need of society for their services.

(3) Broadcasting services can expand in one of its traditional roles - that of providing public information about our community. National efforts such as the air and water pollution programs, civil defense, the space program, and the community health program depend on a high level of public awareness and cooperation if objectives are to be met.

Almost every public service has a large number of unsolved problems which are comparable. These problems include: limited number of trained professionals, greatly increased body of knowledge, greatly increased need and demand for services, greater differentiation of functions within the service involving increased professional specialties, expanded role for subprofessional and semi-skilled categories, and increased stress on public self-reliance assisted by the distribution of public information.

If television and other newer media can be used effectively to assist community programs, why are they not in greater use today? While the noncommercial media specialist has developed some knowledge of the needs of education and ways of meeting them, he is not particularly familiar with the needs of welfare, public health, civil defense, agriculture, commerce, and so forth. At the same time, professionals in every category--the welfare caseworker, the rehabilitation worker, the public health officer, et al--have been trained to use direct face to face methods, assisted by the printed word, in their relationships with the public they serve. Professional apparatus has relied on direct teaching, organized staff meetings, and one to one relationships to build professional staff competence. Any wide scale use of television, radio, and newer media would require substantial modification of existing methods.

Because of the lack of familiarity which each specialty has with the objectives of the other, explorations into the use of noncommercial media for services other than formal education, defense, training, and medical education is just beginning. However, it is beginning. I received a number of indications of this over the last several weeks. A letter from a midwest university station manager described his very promising negotiations with the State Director of Civil Defense in jointly developing and funding State-wide ETV operations. Seymour Siegel, Director of Radio Communication for New York City, described the benefits of television in the training of municipal employees. Some 4,000 nurses in each of the past two years have received training courses over Channel 31. The staffs of privately operated nursing homes are exposed to special training by television. Television has been recognized as a tool for improving mental health service. The Police Academy distributed training materials by television to each of 20 precincts. Some 15,000 members of the fire fighting force receive weekly instruction; a job which once took an entire year by means of traveling drill instructors is accomplished in a week. In addition, some 75 neighboring communities use the program.

A review of NET program development showed them to be assisting a number of agencies including the Social Security Administration, the U. S. Information Service, the Public Health Service, the Argonne National Laboratory, National Aeronautics and Space Administration, Atomic Energy Commission, the Census Bureau, the National Science Foundation, and others.

A State Director of ETV described negotiations involving two southern States in which one State provides the professional instruction and the other provides television production capability for the preparation and distribution of ETV training materials for welfare caseworkers. A station manager discussed negotiations for a planning grant looking to the preparation of materials for the training of retarded children. Another sent a report of developing plans for programming into day care centers for pre-school children. Although there is outstanding pioneering in all parts of the country, the magnitude of the effort has not equaled either the needs to be served or the existing opportunities for service.

The Nation will soon have 100 television stations serving an area in which 140 million Americans live. We can look forward to another 35 stations to be in operation by the end of 1965. The average station operates 5 days a week, 8 hours a day. The fact is that our television stations have a potential for much greater use, while at the same time there are many community services that could benefit from using them.

We have approximately 310 educational radio stations and new ones are being licensed at the rate of 30 a year. With a few exceptions--important exceptions--they provide limited programming for limited institutional needs to meet the limited demands of limited audiences. Yet, perhaps even here, there may be a basis for anticipating a more dynamic involvement in the needs and life of the community with the active planning now being pushed in response to the long felt concern over educational radio development.

The challenge for those in educational television and radio is to see their function in the broadest terms. To place themselves at the disposal of all agencies whose purpose it is to preserve and strengthen human dignity. Exploration in the "new" areas of education will require systematic study. Valuable publications include "Handbook on Programs of the U. S. Department of Health, Education, and Welfare" ($1.75), "Grant-in-Aid and other Financial Assistance Programs Administered by the U. S. Department of Health, Education, and Welfare" ($2.25), and "Catalog of Federal Aids to State and Local Governments" ($.40). These may be obtained from Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

Opportunities are not limited to programs administered by the Department of Health, Education, and Welfare, but exist in many other areas of the public service as well. In the last year alone the media specialist has seen the following legislation which is of direct interest to his field: the Economic Opportunity Act (P.L. 88-452), Titles II and V; Amendments to the National Defense Education Act (P.L. 88-665) Titles III, VII, XI, Sec. 602; and the Vocational Education Act of 1963 (P.L. 88-210) Sec. 4(c).

Media specialists, conditioned by Title VII of NDEA and the Educational Television Facilities Act, wherein the relationship between applicants and the Federal Government is direct, may mistakenly look to Washington for the key decisions when exploring the opportunities under other programs. However, by and large, major decisions are made at the State and local level. Research and Development funds are generally excepted from this rule, however. While they usually involve final approval at the Federal level, media specialists should remember that the cooperation of local field agencies is normally essential.

Systematic review of opportunities to adapt media to educational needs involves a broad acquaintanceship with State and local administrative authorities--State Welfare Directors, Commissioners of Public Health, Consultants on the Aging, Commissioners of Commerce, and the list could go on at length. The resources of those University departments close to the public services, and partners with them in research, innovating demonstrations, and professional training, can be particularly important during pioneering stages. Within HEW a great deal of assistance can be provided by HEW Regional Offices.*

As the specialist in educational media seeks to serve the whole community he will direct his attention to the many needs of many audiences. Unfettered by the need to produce mass audiences and create mass markets for mass production, educational broadcasting and the newer media are capable of adapting program services to the multiple needs of the diversified human race. By enlisting in the effort to elevate life and improve opportunity in America, the person

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*Persons interested in further detail about HEW program opportunities may wish to arrange for interviews with program field office representatives.

Region I - Mr. Bresnahan, 120 Boylston St., Boston, Mass. 02116
Region II - Mr. O'Connor, 42 Broadway, New York, N. Y. 10004

who takes leadership in the development of noncommercial communication systems for the public services contributes to the creative differences of individuals and the dynamic pluralism of the Nation.

ADMINISTRATORS TAKE A LOOK AT EDUCATIONAL TELEVISION

Bernarr Cooper, State Education Department

Considerations of the television medium from the administrator's point of view are not usually based upon what the administrator says. What is significant is what the administrator does or considers when he approaches the possibility of using the television medium.

The average administrator usually begins with a double-headed question. What kind of equipment or hardware do I need and how much does it cost? I'm sure that those of you who have been in a position of selling your administrators on the potential of the medium have found that this is the first consideration: amount, in terms of equipment; and then awareness of the budget within which he must live.

When he begins to talk about the economics of the acquisition of the 'hardware,' the administrator soon comes to realize (if you have presented your problem to him well and if he is 'sold' on it) that he must add to his acquisition costs the cost of installation. Usually, the equipment or hardware is where the administrator begins his thinking, depending upon who is selling what to who. However, as we in the State Education Department talk with administrators and consider with them the use of the medium, we encourage a certain kind of thinking approach -- one that indicates there is a place at which to begin, other than money and hardware.

This suggestion applies to administrators at all levels. Where does the 'good' administrator, the one who is truly and deeply involved in what it is he wishes to accomplish -- where does he begin in this chore? The good administrator begin first with the identification of his own needs in his own system. He'll ask the simple question, "What does my faculty and staff need if I am to consider the installation of this medium to meet the basic instructional needs to which we are committed?" Identification of needs is a universal 'must' at all levels of education. There are certain differences at the elementary and secondary levels which enter into the consideration of administrator-staff relationships when embarking on the use of a new mass medium of distribution. The administrator who is concerned with the elementary level must begin (oddly enough and practically enough) with his counseling and guidance people. The way in which a medium shall be put to use to meet needs at the elementary level will depend upon a consideration of the broad spectrum of needs that exist at the primary level and that become refined as we get to the third grade level.

A simple approach to the needs at the primary level indicates what we already know -- that the broad spectrum of readiness knowledge, and readiness skill to be inculcated in the kindergarten-through-third-grade child needs to determine the specific use to which a medium will be put. When we get beyond the third grade level, there is a need to reflect on the potential of the child of 'the middle years' as some psychologists have referred to it. What we do in early childhood, and the basis we lay there in meeting needs for readiness skills and basic knowledge will determine to a great extent the rate at which we exercise the use of the medium when we begin to approach the child and his needs for learning at the 'middle childhood' level. These are conclusions to which many of the administrators have come.

We may begin with these considerations in mind before we consider the medium itself. Such a consideration helps evolve a most successful program in teaching and learning. At the secondary level, the teaching of a specific subject presents a whole host of scheduling problems. Here the administrator wanting to use television begins with a consideration of how he is going to meet the scheduling problems. What the administrator is encouraged to do is to consider the content needs which he is now satisfying either in depth or in breadth. Next, he must consider the problem of moving the total student body for each subject to be learned. Then the administrator must consider the way in which differences in somatic development within the student group influence interest and learning spans. Unquestionably, levels of interest are in sharp contrast as the teen-ager proceeds from one level of somatic development to the other and from one content area to another.

One of the things that the experimenting administrators discovered was that differences in somatic development in the target student group effect the use to which the medium can be put. In using television, administrators found that changes that we have experiences in the whole learning process were still valid. Just as we have moved from a society in which the deductive learning process was for several centuries the methodology of approach to learning in the classroom, in television, too, we have moved to an inductive method. This latter method more readily satisfies. An inductive approach to learning brings about the kind of environmental situation that leads to intelligent questions that should evolve from that which is presented through the medium. Once the student recognizes that learning when motivated brings clear indications of reward -- regardless of the medium -- then the administrator can successfully use not only TV but also programed instruction, in various subject areas.

Most administrators, as they look back on their experience with the use of television, have recognized that there is a real need to establish centers in schools that shall be demonstration centers in new methodologies of teaching and learning, new approaches to teaching and learning needs. Many of the administrators who experienced some let-down with the objective measurements of learning outcomes when information was presented through the television medium have equated the potential of television, and the potential of film. They have come to the conclusion that what they need in order to effectively use any mass distribution medium is a properly focused utilization orientation on the part of the using teachers. Some of the more forward thinkers among the administrators have proposed that which is needed is a whole spectrum of films, video tapes, and the like which take the entire utilization process from the very beginning of planning, to demonstrations by outstanding teachers in the actual process of using media, to measured outcomes, to the follow-up techniques. This is what administrators have been asking for. Whether or not we have yet produced such a utilization series is a great question mark. We all know that Airborne has produced some very outstanding utilization films in specific areas related to the specific programs which they do. Administrators have been highly critical of some of these. Some of them are overextended. Some of them do not depict an ongoing idea that they feel presents a learning situation in a positive way. Several attempts have been made at the University of Michigan to produce utilization materials. One outstanding film on the activity of a studio teacher has found a great deal of acceptance, but the administrator criticizes it as doing only part of the job.

A current series emerging in Florida is a proposal of ten programs of orienta tion to and utilization of the television medium. This series has already been viewed and rejected by the Eastern Educational Network, Committee on Utilization.

The administrator charges that persons concerned with the use of mass media in the learning process must readily adapt themselves to recognizing needs of the total educational system not as it is now, but as it will be in ten to fifteen years. We must evolve methods of approach in teaching and learning which can be viable in light of the rapidity of the changes which we are experiencing now, and in terms of influences from outside the field of education that clearly indicate our present methods of dissemenating, inculcating, or whatever you want to call the teaching process are no longer adequate. The method that we are pursuing now is no longer (in the administrator's mind) a viable mode for teaching and learning in relation to the many problems that continue to arise with the passage of time. The charge is clear. We must stop thinking of knowledge as a resultant product on the part of the learner. Knowledge is no longer a completed product. If we use the inductive method of teaching through the television medium, we will not complete a learning cycle, but leave it open-ended. Thus the learner will continue to learn in Continuing Education situations. In a word, what the administrator has said is we need both new institutions of teacher-training and new teacher training methods. The existing ones, overlaid with utilization techniques as we conceive them, are not enough for the forward-looking administrator and create great difficulty if the administrator tries to take that which is new and impose it upon that which is ongoing and which has already become rather conventional.

The administrator at the elementary and secondary level charges us with what all of us have known, with what all of us have been told time and time again. It is such an old statement that it is almost a cliche and many of us have tended to almost shrug our shoulders every time we hear it. He starts first with the premise that childhood needs to be a time when the learner recognizes that school learning leads to worthwhile outcomes. How we achieve this, I don't know. How this can be achieved as a continuing thing is yet to be demonstrated, in most school systems. The second charge is rather simple, a three worded method of direction to all of us. The administrator looking to the teaching level, looking to the use of media says "Learning is pleasant." Some of us observing the student in the average school environment cynically wonder whether or not the student really finds under all conditions that "learning is pleasant." Of course the third statement of direction to us is something that every teacher has tried to achieve both for the learner and for the administrator who observes him. We are committed to the belief that learning must be at such a level as to make the developing child feel that he is more like the adult with whom he associates or whom he admires. Whether or not some of our administrators are realistic in suggesting that all of our children admire all of the adults with whom they associate, I'm sure a realistic question and a challenge.

CURRICULUM PLANNING FOR EDUCATIONAL TELEVISION

Bernarr Cooper, State Education Department

The major problem in curriculum planning for educational television revolves around the problem of a team approach to the total concept of that which shall be done through the medium. The concept of team teaching, the involvement of supervisory and content personnel, and the total approach to instructional needs in the classroom and maximum learning effectiveness are not new either to the content specialist, to the teacher, or to the curriculum coordinator. What is new (and what frequently creates problems) is the need to recognize that a combination of total resources dedicated to the student and the learning situation can be disseminated through a mass medium such as educational television.

I think there can be no doubt that the major goal to which all of us feel committed in the instructional program is that of the need, the desire of the student to take away the maximum amount of information from the learning situation. But what there is frequently little agreement upon is the need for this information to be disseminated and absorbed by the student as a positive learning experience in a minimum amount of time. The point at which time becomes of an essence is the point at which we come to the realization that the compounding of knowledge and sheer rote content information has increased at a geometric rate. Whereas during the last century it was thought that knowledge doubled every 50 years we now face the reality that the doubling of knowledge takes place within a decade and it is rapidly approaching the point where we can now project that the doubling of knowledge will take place within a five year span. If we accept the fact that the present generation of elementary school pupils will require reeducation at least 3 times in their own life-time then we must recognize the equally compulsive need of the classroom teacher to disseminate as much information as is possible so that her present elementary student will indeed be capable of this reeducation.

Curriculum planning for educational television cannot take place in a vacuum. It cannot be simple curriculum planning according to the traditional method of approach. Experience is clear -- the kind of curriculum approaches planned for one medium are not necessarily satisfactory or possible in another medium. It is at the point where the content is defined, where there is agreement between the supervisor or curriculum coordinator (or both) with the teaching faculty as to what the objectives shall be that the specialist must be brought into the picture.

The function of the educational television specialist whether he be producer, director or educational television coordinator is to make possible the maximum effective use of the medium in terms of what the student shall learn. It is the educational television 'specialist' who must give insights and directions as to what the medium can accomplish.

Properly prepared for this task, the educational television specialist will bring insights to the problems of student learning-effectiveness. It is a hoped for goal that the educational television specialist can lend insights not only to the functioning of technical equipment, but to the advantages (as well as the limitations) of the medium in being able to project a particular piece of information. The curriculum planners, too, have an obligation to provide the broadcast base of planning approach possible so that the educational television specialist may advise well. If other media are to be used or may be used the curriculum planner must have the information and indeed the material at hand. Working together, the curriculum planner and the educational television specialist can bring a high order of learning-effectiveness-approach to every curriculum planning problem.

But we cannot stop with the simple consideration of media and content, alone. The curriculum cannot be effectively planned, nor can the educational television specialist be an effective advisor and coordinator unless a total picture of the utilization function in the classroom or in the home is carefully structured. Certain significant questions must remain in the foreground of all curriculum planning, whether it be for educational television, for the use of any of the other mass media, or for the traditional classroom approach.

Basic to all of what has been said here are such questions as: What is the learner expected to take away from this experience? How is he expected to continue with the learning process that has been stimulated through the television medium? To what extent are the classroom teacher and other content specialists available to the student for follow-up or for adequate preparation for viewing? What provisions are made for the 'average,' the 'accelerated,' or the 'slow learner-viewer?' How adequately have guide materials for the teacher, supplementary resources or suggestions for these, or other types of follow-up materials been provided or recommended in the over-all curriculum planning of the particular broadcast or series of broadcasts?

It would be a simple matter to place upon the shoulders of the teacher or the curriculum planner the responsibility for making decisions in relation to all of the questions indicated above, but this may not and cannot be done unless such information is conveyed to the educational television specialist, as well. To provide him with maximum insights into both material and learning goals is to provide him with the where-with-all for making himself an effective instrument for curriculum planning in educational television.

TRAINING BY TELEVISION

Morris Freedman and Pierre A. Lehmuller,
New York City Board of Education

Morris Freedman

INTRODUCTION

Each year many teachers leave the New York City Public Schools, for a variety of reasons. Leaves of absence are granted for sabbaticals, reasons of health and maternity, and for continued education. In addition, teachers transfer to other systems retire and change professions each year.

As a result of this turnover teacher education becomes a major task of the school system. In 1963-64 six thousand new teachers were assigned to fill vacancies and new positions. Many of these teachers required in-service courses. Teachers also register for in-service courses to receive credits for salary differentials and to supplement their professional competencies.

The Bureau of Audiovisual Instruction is organized to meet part of this problem of in-service education. Our thirteen field supervisors provide demonstrations and workshops, train audiovisual coordinators, organize school audiovisual programs and offer in-service courses. Twently courses are being offered during this 1964-65 school year. Other teacher training services are provided through publications, catalogues and resource bulletins.

PURPOSE OF A TELEVISED IN-SERVICE COURSE

To strengthen our teacher training program the Bureau planned a fifteen week televised in-service course. The course was designed for home viewing and credited in much the same way as the more traditional classroom course. The purpose of the series was to demonstrate the values of audiovisual media in helping teachers to resolve teaching and learning problems. To this end the series presented a variety of media and their implementation in the course of study. Other objectives of the course were to: (1) Stimulate teachers to use audiovisual media in their teaching; (2) Motivate teachers to ask for more audiovisual services; (3) Familiarize teachers with programed instruction materials so that they could train themselves in the operation of a tape recorder and a 16mm sound motion picture projector.

TELEVISION COURSE DESIGN

The rationale used for selecting content and the sequence for the series was not unique. The series opened with a general overview of the audiovisual program in New York City and its relationship to the teacher. What followed for the next thirteen weeks was a progressive development of the utilization of simple materials starting with flat pictures, slides, filmstrips and transparencies. This grouping was followed by a presentation of audio devices such as tape, phonograph and radio. The combined sense approaches used in television and 16mm sound film were covered later in the series. Programs were also devoted to cultural and community resources. The complete series is listed below by title.

PROGRAM #	TITLE
1	Classroom Communications - An Overview
2	Teaching With Flat Pictures
3	Application of Filmstrips to Instruction
4	Learning From Projected Slides
5	The Versatility of Large Transparencies
6	Instructional Uses of the Tape Recorder
7	Creative Teaching with the Radio and Phonograph
8	Teaching With Television
9	Using Television in the Classroom, Pt. I
10	Using Television in the Classroom, Pt. II
11	Using 16mm Sound Film in the Classroom, Part I
12	Using 16mm Sound Film in the Classroom, Part II
13	Cultural Resource Opportunities for The Schools
14	Using Community Resources for Teaching
15	Evaluation Meeting

TELEVISION COURSE REQUIREMENTS

Each of the telecasts was one-half hour and presented from 4:00 P.M. to 4:30 P.M., once a week via Channel 13, WNDT, New York. Designed for home viewing the original course proscribed several rigorous requirements. Each registrant had to view each telecast; complete assignments after viewing each program; teach themselves how to operate a tape recorder and a 16mm sound projector using two programed instruction manuals; and participate in the end-term course evaluation. To guide each teacher's viewing a television manual was prepared. For each telecast the teacher was given an overview, understandings the program intended to impart, an assignment and selected references.

Assignments which were considered sub-standard were returned with appropriate reasons for rejection. Registrants were permitted to miss two homework assignments which were considered the equivalent of two absences from a traditional course.

EVALUATION OF THE TELEVISION COURSE

After the course was initially publicized 1,467 teachers applied for registration. Because of administrative and materials limitations 787 teachers were accepted. Each teacher registered received a kit of materials for use during the course. (Each kit contained a Teacher's Manual, a list of course requirements, a program schedule, registration cards, two self-instruction programed manuals and corresponding answer sheets.) When the registration cards were received 379 enrollees remained. By the end of the course 274 registrants completed all requirements and received credit. Twenty-two dropped the course and 112 did not complete course requirements.

Although the course was designed to provide 15 telecasts fourteen programs were produced and the fifteenth week was devoted to an evaluation of the series. The evaluation meeting was held in the auditorium of a centrally located high school. Registrants were notified well in advance and 198 attended. An evaluation form was prepared for completion at this meeting. Small group sessions were organized to give each teacher the opportunity to express their most candid reactions to the course. The most pertinent findings are listed below:

TEACHER RESPONSES TO EVALUATION STATEMENTS AND THEIR TEACHING LEVEL

N = 198

Teacher responses are keyed as follows:

A - Very strong agreement
B - Moderate agreement
C - Neither agreement or disagreement (neutral)
D - Moderate disagreement
E - Very strong disagreement

Statement I One course objective was to show how audiovisual media can be used by teachers to resolve classroom problems. This course objective was attained.

	Teacher Responses					
Teaching Level	A	B	C	D	E	Total
Elementary	71	45	7	2	0	125
Junior H.S.	15	22	2	7	1	47
High School	11	11	2	1	3	28

Statement II One course objective was to present a variety of applications of audiovisual media in a variety of content areas. This course objective was attained.

	Teacher Responses					
Teaching Level	A	B	C	D	E	Total
Elementary	78	34	8	2	1	123
Junior H.S.	21	15	5	2	2	45
High School	11	7	5	2	3	28

Statement III One course objective was to stimulate viewers to use audiovisual media in the classroom. This course objective was obtained.

Teaching Level	A	B	C	D	E	Total
	Teacher Responses					
Elementary	84	36	3	0	0	123
Junior H.S.	23	14	4	2	1	44
High School	12	12	2	1	1	28

Statement IV One course objective was to stimulate viewers to ask for more audiovisual services for their classes. This course objective was attained.

Teaching Level	A	B	C	D	E	Total
	Teacher Responses					
Elementary	73	31	17	3	1	125
Junior H.S.	18	21	3	4	1	47
High School	11	11	3	1	2	28

Statement V One course objective was to indicate the availability of specific materials through the Board of Education's G-1 List requisitioning procedures. This objective was attained.

Teaching Level	A	B	C	D	E	Total
	Teacher Responses					
Elementary	74	42	2	4	3	125
Junior H.S.	14	19	7	3	2	45
High School	16	6	5	1	0	28

Statement VI One course objective was to familiarize teachers with programed instruction (self-instruction) materials through their use of two programed manuals. This objective was attained.

Teaching Level	A	B	C	D	E	Total
	Teacher Responses					
Elementary	73	40	4	5	3	125
Junior H.S.	21	15	5	5	0	46
High School	14	9	3	0	1	27

Statement VII One course objective was to teach the operation of the Revere Tape Recorder, Model T-2000 and the RCA Motion Picture Projector, Model 416. This objective was attained.

Teaching Level	Teacher Responses A	B	C	D	E	Total
Elementary	59	45	11	4	4	123
Junior H.S.	22	16	4	4	1	47
High School	13	9	3	1	1	27

Statement VIII One course objective was to show the role of the school audiovisual coordinator. This objective was attained.

Teaching Level	Teacher Responses A	B	C	D	E	Total
Elementary	43	34	25	12	7	121
Junior H.S.	15	19	5	5	3	47
High School	11	10	4	2	1	28

NEXT STEPS

All indications point to the fact that home-viewed telecasts provide a highly successful method for in-service teacher training. Although teachers found the series valuable a number of changes were suggested in terms of organization and content. In preparation for a second offering for the Fall 1964, course requirements were modified as follows: Assignments were reduced, the programed instruction manuals were withdrawn and administrative procedures were improved. When specific films are revised we hope to include more demonstration teaching lessons which will be more representative of all school levels.

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Pierre A. Lehmuller

INTRODUCTION

As the person selected as television teacher for the series, "The Utilization of Audiovisual Media in the Classroom," I viewed my role as one centered on translating the goals of the series into fourteen effective telecasts.

PERSONNEL INVOLVED

Each individual telecast actively involved the following personnel:

1. the television teacher
2. the program producer
3. the production supervisor
4. the director and his staff

Each telecast had a different producer who was the Bureau of Audiovisual Instruction Supervisor with a special competency in the media being emphasized on that program. The producer organized the basic framework of the telecast, prepared a working script, did research, identified potential participants in the telecast, initiated, when necessary, production of filmed lessons for inclusion in the telecast, assisted in producing graphics, photographs or slides, and, on occasion, appeared on the telecast. As television teacher, I kept in constant touch with each producer in all these activities, since, in the final analysis, I would be responsible for what the final product looked and sounded like.

The production supervisor was assigned to the series by the Bureau of Radio and Television. He brought to the series years of experience in producing and participating in radio and television broadcasts. Basically, he guided us in selecting the most stimulating means of presentation and steering us around the many obstacles that confront the neophyte in television.

The director of the series was assigned by Channel 13, WNDT, and was the professional television person responsible for getting each telecast successfully taped.

DEVELOPING THE PROGRAM

To assist new television teachers, the School Television Service of WNDT conducts a thorough workshop that covers all aspects of television ranging from the philosophy of instructional television to the techniques of applying make-up.

At any given time during the series three programs were in active development.

1. Immediate preparation of the telecast of that week which included final conferences with guests, rehearsing demonstrations, film editing, transporting materials to the studio and tying down loose ends.

2. Final preparation of the next program which included conferences with the director to plot timing and camera action, meetings with guests and timing of sequences.

3. Organizing the final structure of the telecast two weeks distant.

In addition, the framework of future telecasts was worked on whenever there was a free moment. Personal preparation for each telecast ranged from 75 hours for the first few telecasts down to 35 hours for the final telecast.

PROGRAM ACTIVITIES AND APPROACHES

No telecast used a single approach to illustrate utilization of the media being presented. Rather, a variety of activities and methods of presentation was used in each program. Some of the methods used were:

1. Filmed classroom demonstration lessons produced by the Motion Picture Production Unit of the Bureau of Audiovisual Instruction.
2. Remote "live taped" classroom lessons.
3. Students in individual and small group activities in the studio ranging from interviews with high school students on the values derived from attending the theater to elementary school pupils in an original playlet.
4. Interviews with, and demonstrations by, authorities in the communications media.
5. Roundtable discussions with teachers and principals.
6. Demonstrations of media.
7. Film excerpts from educational and commercial sources.

PROBLEMS

1. Limitation on activities within the television studio.
2. High costs involved in filming or remote television pickups.
3. Operating within the structure of rigid union regulations.

EVALUATIONS

The teachers viewing the telecast were the best source for an honest and frank evaluation. Excerpts from their evaluations have been summarized by Dr. Freedman.

VIDEO TAPE RECORDER: AID TO CCTV

Dalton Levy, Plainedge

Several years ago at Plainedge there was no need for a video tape recorder. We were restricted in our closed circuit operation to only one building with equipment that was of inadequate sophistication. The reason for this inadequacy was the lack of technical development of low cost television studio equipment that could be obtained with a public school budget.

However we were very satisfied to be able to prepare programs in the studio and transmit them directly to the rooms via the school distribution system. The studio equipment consisted of industrial type observation cameras which provided an acceptable sync picture. Audio was transmitted through the PA system of the school.

Video tape recorders at that time were just being widely accepted in commercial stations and were prohibitively expensive for a closed circuit educational television operation. Even though many of the programs we produced had excellent content, the development stage of the "school" VTR had not as yet been reached. Therefore only the audio portion of the program could be saved.

During the years 1960 to 1962 our teachers became adjusted to educational television and the desire to save programs for later showings became stronger. It was forseen how scheduling problems could be solved with the use of the VTR. Programs could be made available to teachers when they could best utilize them in their instruction.

Prior to the video tape recorder becoming a reality, it was necessary for us to obtain better origination equipment. During the time interval from our initial step into educational television technological improvements in closed circuit equipment moved ahead by leaps and bounds. It was not long before professional type closed circuit equipment could be purchased within a public school budget limitation. As soon as practicable the Plainedge Board of Education and the Superintendent of Schools, John Rinehart, approved the necessary budget to obtain this equipment. With the backing of the State Education Department two new Sarkes Tarzian camera chains, a film chain, switcher/fader, wave form monitor, oscilloscope and many other items were purchased. We also expanded our distribution systems. All the other schools in the district were wired for educational television and we were experimenting with 2,500 megacycle microwave transmission. All schools in the district were joined together with this transmitting system developed by the Adler Educational Systems. This expansion as well as the increase in acceptance of educational television in the high school led to many scheduling problems. In turn, therefore, we realized an intensive desire to obtain a closed circuit video tape recorder.

There was a major breakthrough into the low priced VTR in 1963. The Ampex Corporation, Machtronics, and the Sony Corporation almost simultaneously introduced CCVTR's that were to be the answer to our school districts problems. These units finally were in production. The cost averaged about $15,000.

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When our VTR was delivered it was quickly put into use. Anticipating its arrival our entire studio system was designed to provide for the most versatile use of both live and taped programs. It was possible to provide live, filmed or taped programs to either of high school closed circuit distribution system or to the microwave transmitter, therby reaching all our schools. If a program were being presented live or on film it could be simultaneously taped with the video tape recorder. This process took place through the use of a special electrical program switcher which did not require the use of jumper cords. The switcher designed by Sarkes Tarzian gave us positive accurate electronic push-button control over whatever system we wanted to program, and the video tape recorder was the key to open this complex of versatility.

It now became possible to prepare programs ahead of schedule. Taped segments of our live programs were held in reserve to be used if the television teacher were absent or could not for some reason or another present a live program. Each live program was taped and held for several days in the event that a class wanted to have it replayed. This was usually done as a review or if the class was on a field trip and missed the lesson. The programs that we handled like this were our regularly scheduled elementary lessons presented via the closed circuit system, and included elementary foreign languages to all the 4th and 5th grades in the district and modern mathematics to all grade 6 students. Two full-time television teachers were employed to prepare and present these telelessons and then follow up each lesson by visiting the classrooms in the district on a regular schedule. Video-taped programs permitted these teachers to observe their lessons and teaching techniques in a classroom during an actual presentation. By so doing they could evaluate their own work by seeing first hand how it was accepted by teachers and students. Needless to say this was and is the most positive evaluation that any teacher could desire, to sit in the back of a classroom and see yourself teaching while observing class response.

With the use of the video tape recorder in the high school we were able to overcome all scheduling problems. Originally only those classes that were meeting during the period that the talent was available could watch the programs. We considered ouselves very fortunate when the participants on the program consented to go through the ritual twice so two groups of students could take advantage of the media. In addition to this factor there were many times when teachers would have preferred the program at a later time in the year coinciding with their curriculum presentation.

In addition the video- taped high school programs decidedly changed teacher attitudes toward television. Originally with a research project, classes were required to watch programs. There was little enthusiasm most of the time. The video tape recorder in making it possible for teachers to have their classes watch the lesson when it was appropriate led subsequently to the demand for televised lessons to such an extent that requests far outnumbered the required watching. Programs in the high school are now by request only, first come first serve. Many times there are insufficient television receivers to accomodate all the teachers and classes.

Our latest operations in the high school calls for all programs to be taped and replayed each period for a full day when it is released. They are taped for later rebroadcast to eliminate any scheduling problems. With the video tape recorder we produce the programs when the talent is available and then provide the playback during the time when teachers can utilize the contents. The tapes are kept on file for review or later presentations.

One of the big problems that immediately confronted us was the shortage of raw video tape stock in the district. Program after program was recorded and put aside until there was no tape left. Then came the very difficult decision as to which tape to erase and use for the new program, with the possibility that the new program might not be as good as the one originally recorded on the reel. Unfortunately the video tape recorder created budgetary problems. The quantities required for complete flexibility of operation are not easily obtained from an educational budget already enacted on by the Board of Education.

As with anything new, it takes only a short while before difficulties reveal themselves. The Plainedge School District was one of the first educational systems to get delivery on a video tape recorder. From the moment it was installed it provided us with enough good results to whet our appetites for more. Yet, at times it dampened our enthusiasm with the frustrations resulting from many petty malfunctions. The primary problem was heads were wearing out within several weeks of operations. The video tape itself had numerous drop outs (which results in a condition of flashes across the screen during reproduction) which became very disconcerting. Heads continually clogged with the oxide from the tape and more times than not the program was not recorded. However, during the months that we had the VTR a considerable number of manufacturing production changes took place. Even though the company did its best to keep us in operation, the demand on the video tape recorder was too much. Regardless, we finished the school year with a definite desire for a video tape recorder that would provide us with dependable service.

Fortunately "lady luck" smiled in our direction. The Federal Communications Commission approved the 2.5 KMC band for fixed service closed circuit use, and since we had been experimenting with this system, the district Superintendent and the Board of Education concurred that a permanent installation should be obtained. The FCC rules required that we obtain a different model VTR which could be used for broadcast via microwave CCTV. In subsequent discussions with the video tape recorder manufacturer he agreed, for an additional sum of money within our budgetary allocation, to replace our recorder with one of the broadcast type.

There is no question that we anxiously awaited the new machine. We had been in touch with the company and knew that many modifications and advances had been made in the few short months of its existence. The recorder was finally delivered and unpacked. The cables and connectors were plugged in and the instruction book read. Less than half an hour later, the first short tape was being replayed. It was beautiful! Clarity, stability and ease of operation of the recorder unquestionably spelled out that this was what we initially desired. After two months use the recorder is still operating daily recording and playing programs to all our elementary schools and high school with completely satisfactory results. A new videotape developed by the manufacturer seems to have solved the drop out and head wear problems.

Now it is possible for us to strongly rely on the video tape recorder. Our television teachers produce the programs and then visit the classrooms when they are being replayed. If the initial result is not satisfactory the program is reworked until it has the qualities desired. Our tapes are kept handy and replayed when requested by teachers in the district.

Operations on the VTR, as well as the studio equipment is relatively simple. Students on the AV squad perform 95% of all the studio tasks. Each period a new group of boys arrives in the studio and each must perform his assigned duty. If one is absent, the others know what must be done. The squad is an efficient well organized group which has exceptionaly high morale.

Five years of operation with ETV has certainly shown us in Plainedge that this form of instruction can be an outstanding tool for the classroom teacher. With proper direction and interest and enthusiasm, television and the video tape recorder have become improtant members of the Plainedge family. There have been many difficulties and successes, all listed in reports available from the school district. Our final results indicate that it has been worth all the effort.

DEVELOPMENT OF "PROGRAMED" AV INSTRUCTION FOR TELEVISION

P. K. Komoski, Columbia University

This is a brief description of a demonstration project now underway at the Institute of Educational Technology, Teachers College, Columbia University, dealing with the application of self-instructional programing principles to the production of televisions lessons.

Background

The purpose of this project is to demonstrate and disseminate how the findings of a growing body of educational research may be effectively applied to the development of videotaped and filmed instruction. In essence, the project consists of a systematic application of principles derived from programed instruction and a substantial body of instructional film research to the creation of six demonstration videotaped lessons. Upon completion of the work, consideration will be given to the desirability of an additional phase during which the lessons would be translated onto film for purposes of field testing and broader dissemination. It is hoped that the techniques and procedures developed during this project may be successfully applied by others to increase the general effectiveness of television as an instructional medium.

The six demonstration lessons created during the proposed project will be developed and validated on small groups of learners, with a view toward possible dissemination in a later project via as many means as possible; e.g., educational television stations and educational film libraries. The work now underway pertains only to the development and initial validation of these demonstration lessons.

Procedures

The procedures being used in this project are:

1. The development of a detailed statement of instructional objectives to be achieved by each of six lessons in a series on human ecology keyed to the fifth and sixth grades, and by the series as a whole. The creation of a complete behavioral analysis for Lesson I of all things the learner must do during the process of acquiring the stated objectives, including those behaviors (skills, information, procedure) he should already possess in order to respond appropriately to the instruction. The translation of the behavioral analysis for Lesson I onto a reliable criterion test, and development of a script and storyboard for this lesson.

2. The production of the first version of Lesson I. In developing the format for the lessons, particular application will be made of the following self-instructional programing techniques: active student response, immediate knowledge of result, prompting of correcting responses, and such other appropriate techniques as may be suggested by the behavioral objectives. It is

intended that the external pacing required by the use of videotape will be determined first by the behavioral analysis, and ultimately by an empirical validation. Following this production, the lesson will be presented to a group of fifth and sixth grade subjects. The subjects will be tested after this presentation to determine whether the criterion performance has been achieved. Each subject's behavior during and after instruction will be analyzed, making use of learner-recorded responses, experimenters' observations, post-test data, and interview data. The lesson will be revised and re-tested until the criterion performance is attained. The fourth version of this lesson is now being produced. At this point, behavioral analyses, criterion tests, and scripts for Lessons II through VI will be developed.

3. Videotape and empirically validation of Lessons II through VI, in accordance with the same cycle employed for Lesson I. Completion of the entire series and appropriate revision of the series on the basis of student trials.

Project Staff

Principal Investigator:	P. Kenneth Komoski, Associate Executive Officer, Institute of Educational Technology, Teachers College, Columbia University
Production Director:	Robert D. Smith, Director of Program Development, WETA-TV, Washington, D.C.
Research Psychologist:	Edward J. Green, Professor of Psychology, Teachers College, Columbia University
Programed Instruction Specialists:	Herbert Wayne Gustafson, Research Associate, Institute of Educational Technology, Teachers College, Columbia University Bernard Basescu, Research Assistant, Institute of Educational Technology, Teachers College, Columbia University
Subject Matter Specialist:	George Warren Carey, Assistant Professor of Geography, Teachers College, Columbia University

Rationale for Selecting Videotape Production as a Process

1. The Videotape Process. This process permits rapid production of programing sequences and entire instructional programs, immediate viewing and evaluation, immediate pre-testing with students, and immediate reproduction of segments and entire sequences determined to require revision. Thus, the use of videotape will permit reduction of time, required for the project over that which would be required by film production, which would demand more set-up time, delays for laboratory processing, and additional delays for editing.

Videotape will be used to record all segments and complete programs. Those determined to be unsuccessful will be erased, and the videotape reused. Certain segments or complete sequences which prove useful as a record of early attempts will be saved to compare with later efforts. If it becomes desirable to have 16mm film copies made of certain segments or complete programs for use away from the television studio, transfers to film will be made and the videotape reused. Some film production may be required for animation effects which are beyond the capability of television and videotape, but a variety of inexpensive animation techniques will be possible with the television facility.

2. The WETA-TV Production Facility. As the Institute of Educational Technology does not have the necessary equipment and studio space required for this project, WETA-TV, the Greater Washington Educational Television Association, Inc., of Washington, D.C., was selected as subcontractor to the Institute.

The students being used for validation purposes: student populations in the area of WETA studios (installations at American University and Howard University) provide a sampling of children from a variety of socio-economic backgrounds. At present they are being bussed to the production studio. Later in the project, testing will be conducted in regular classroom settings.

THE EFFICACY OF TELEVISION IN THE SCHOOLS

C. Fred Kelley, Channel 13-WNDT, New York City

The topic, "The Efficacy of Television in the Schools," was chosen a few years ago as a title of my graduate study and it continues to pose the paramount question of my professional interest. The power of television to produce the intended effect of improved instruction seems to me to be enormous. Using this revolutionary medium will mean much to all American schools, and especially to those of us assembled here today.

In this introduction I would suggest we first think back eight short years and ask ourselves the questions: How many school systems were regularly using television as an instructional medium in 1956? How many classrooms across America were equipped with television receivers in 1956? How many school television production facilities were operative in 1956?

I would also suggest we reflect on each of our respective professional positions eight years ago. Were any here directly concerned with television in the schools? If not, were any of us at least making personal or possibly some public utterances and predictions as to the potential of this electronic medium as a tool for teaching?

It was just seven years ago, 1957, when Dr. Alexander J. Stoddard challenged, dared and soon rallied many school men to seriously utilize television as a means to improve instruction.

You may recall that in a little blue book he stated at that time:

> Let there be experimentation to determine, first, whether there is a practical way to incorporate television into the school program in such a manner as to substitute for and lessen what the regular teacher must do so she can do the remainder better and also possibly to teach some things even more efficiently then she could do otherwise; and second, to determine which phases and types of the learning experience lend themselves best to the television medium of presentation; and third, whether a high level of teaching efficiency can be attained with fewer trained teachers than would be involved in the usual school organization.[1]

Since this challenge to experiment with television, literally thousands of elementary and secondary schools have either put to action Stoddard's "Blueprint" or have, in some manner, systematically incorporated television as a means to carry part of the instructional load. Since 1957, the use of television in the schools has, indeed, become a huge adventure involving most major metropolitan school systems as well as their surrounding suburban and many rural districts. It is here that I must disagree with Professor Carpenter when he stated a year ago at this convocation that he estimated that "all of these gadgets with which we are concerned, all of the media, however well developed, probably are affecting only about 1% of the total educational enterprise in this country."[2]

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[1] Alexander J. Stoddard, Schools For Tomorrow, An Educator's Blueprint, (New York: The Fund for the Advancement of Education, 1957), p. 43.

I am impressed about the positive efficacy of television in the schools. As another New Yorker once said, "Let's look at the record."

Eight years ago there was barely a school district seriously utilizing television. It was 1956 before any imaginative and systematic experimentation was undertaken. The City of Pittsburgh Schools began pioneering school television of the first community-sponsored ETV station, WQED. This was the first ETV station to bring television instruction into elementary classrooms and attempt to carefully evaluate the effects.[3] This year, the Pittsburgh ETV station is celebrating its tenth anniversary.

At about the same time the St. Louis City Schools were beginning regular, systematic use of instructional telecasts presented via educational television station KETC-TV. At first, the number of lessons were but a few hours per week but by 1956 a total of thirty-six hours a week were being produced including some of the first Ford-supported experiments to utilize television as a means to present the core of instruction to larger than normal size classes.[4]

The first thorough attempt to collect data concerning how elementary and secondary schools might effectively be organized for television, began in 1956 when a group of schools in Washington County, Maryland, was connected by coaxial cable, and under the leadership and the "bold imagination and uncompromising love of excellence" of its superintendent of schools, a "brave advance into uncharted territory began."[5] From this beginning has come the recently published full report on the Hagerstown closed circuit network.[6] The experience at Hagerstown has been and continues to be a vital source of guidance for school administrators contemplating the use of television.

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[2] C. R. Carpenter, "The Sciences of Learning and Technology of Education," Proceedings of the New York State Convocation on Educational Communications, (Albany: The State Education Department, 1964), p. 7.

[3] Earl A. Dimmick, An Analysis and Evaluation of a Television Demonstration of the Teaching of Fifth-Grade Reading, Arithmetic, and French, (Pittsburgh: The Public Schools, 1957), pp. 187.

[4] Earl G. Heminghouse, An Investigation of Television Teaching, (St. Louis Public Schools, Mimeograph, 1956).

[5] Charles Siepmann, TV and Our School Crisis, (New York: Dodd, Mead and Company, 1958), p. 64.

Question: What changes have occurred in pupil achievement after the use of television as a regular instructional resource?

From a survey made two years ago of the leading school systems that placed major emphasis upon research findings, in which tests of significance were applied to classes using television versus conventional instruction, I was able to compile the following table:

SUMMARY OF COMPARISONS OF ACHIEVEMENT OF THE FOUR SUBJECT AREAS WHEN USING OR NOT USING TELEVISION AS A REGULAR RESOURCE FOR TEACHING

Subject	N	In Favor of TV Classes	In Favor of Control Classes	No Reported Differences
English	45	25 (10)	8 (3)	12
Math	35	24 (11)	9 (1)	2
Science	97	78 (23)	10	9
Social Studies	122	50 (38)	21 (8)	51
Totals	299	177 (83)	48 (12)	64

Note: "N" signifies the number of comparisons.

Numbers in parentheses indicate cases where the difference in achievement was reported statistically significant.

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[6] William M. Brish, Full Report On the Closed Circuit Television Network,

Upon examination of these data, a total of two hundred ninety-nine comparisons were made between 1957-62 involving over one hundred forty thousand pupils plus one hundred sixty teachers released from their usual classroom responsibilities in order to spend their full time presenting television lectures and demonstrations. There were four times as many teachers involved who conducted either "experimental" or "control" classes in these various school systems experimenting with television during this period.

In summarizing this survey, in light of changes in pupil achievement, the following conclusion was made:

> Pupils generally did as well, and at times made significantly better achievement test scores when television was used as a regular resource. Significantly higher achievement scores were registered by television experimental groups in one out of every four comparisons made.

You might ask the question here, "So what?" You might hasten to point out that the basic trends of such comparison studies were established at least five years ago.

It is true there has been a great repetition of such studies of achievement comparing "television classes" with "conventional classes." Nevertheless, I would urge that more subject matter achievement studies be conducted, particularly by school systems in their early stages of utilizing television. I say this for two reasons. First, if television is to be used by a school district in an attempt to improve its program of instruction, then research associated with television's use must be appropriate. Far too many of the reported school television studies have been blindly accepted even though there were inadequate controls of important environmental variables. Upon close examination of past research, it becomes clear that the experimental designs in many of these studies were too often oriented around available evaluation techniques rather than toward what should have been expected from and for pupils, teachers and schools. In my judgement, we have not really learned how to measure the difference in the experience of a student who receives part of his instruction by television and that of a student who is taught in a conventional classroom situation. Existing tests for measuring student achievement are not measuring the right thing. They are not measuring the extra increment, the richer, deeper experience that a student has when he has the opportunity to experience something in a more meaningful way. The very process of designing and then applying newer evaluative techniques can challenge and stimulate the professional staff of the school system that invests in television equipment.

Second, I submit that through the evaluative process can come significant, adaptive changes for better instruction. I have witnessed too many so-called "traditional" elementary and secondary teachers catch the fever of experimentation, of participation in something new, to be convinced otherwise. It is through cooperative evaluation involving those who will be most affected--the teachers and pupils themselves--that significant changes can take place. The process of establishing a research design and seeing it through can be "action research" at its best.[7]

Question: What changes have occurred in staff responsibility after the use of television as a regular instructional resource?

In each of the fifteen city, regional and state educational television operations surveyed, approximately 180 teachers were released from all their regular classroom responsibilities in order to present television lectures and demonstrations. In this role, none of these "studio teachers" taught less than twenty, nor more than thirty minutes per day over television. In several cases, studio teachers were presenting a lesson or program each day of the school week. Some were expected to present programs two, three or four times during the school week. In one case, the teacher was released from all classroom responsibilities to present one twenty minute telecast each week.

This survey clearly indicated that the classroom teacher, the teacher with the boys and girls in the school that utilizes television, has remained "the teacher" of the pupils and that the television lesson is used as a resource or as an "organized center for learning" within the total program of instruction.[8] In this process, the role of the classroom teacher has changed in that, along with the studio teacher, he has become a member of a teaching team that utilizes television as well as numerous other teaching media and techniques.

Furthermore, a certain freeing of classroom teachers appears to have taken place through changed organization and altered scheduling, usually involving larger than normal size television viewing groups. It is believed that such scheduling has provided the classroom teacher with more open periods to concentrate on planning related classroom activities and (made more time available) provided special help to individual pupils who needed it. For more detailed information on this scheduling, I suggest one observe the use of television in the following school systems:

> Atlanta, Georgia; Dade County, Florida; Des Moines, Iowa; Detroit, Michigan; Jefferson County, Kentucky; Kansas City, Missouri; Milwaukee, Wisconsin; Norfolk, Virginia; Philadelphia, Pennsylvania; Southwestern Indiana; Tampa, Florida; or Washington County, Maryland.

I believe that television's powerful effect upon motivation for its use, through novelty or the excitement of doing something new, has been neutralized in the school districts that have regularly used television instruction the past six or seven years. Today, there are ninety educational television stations broadcasting in the nation. This means that practically every major metropolitan school district in the nation has access this semester to school telecasts. It is not unreasonable to hope that by July, 1965, after two years of the Federal Educational Television Facilities Act operation, the number of educational television stations in the United States will more than double.[9]

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[7] Stephen M. Corey, Action Research To Improve School Practices, (Columbia University Press, 1962) pp. 161.

[8] John I. Goodlad, "The Teacher Selects, Plans, Organizes," Learning and the Teacher, (Washington, D. C.: Association for Supervision and Curriculum Development, N.E.A. Yearbook, 1959), p. 55.

In this great metropolitan area alone we reliably know that Channel 13/WNDT-ETV can reach over 5,600 schools, public and private alike, in thirty-two counties located in four states.[10] It is estimated that three-fourths of these schools have television sets with more and more being ordered chiefly due to the continuation of the National Defense Education Act which enables school districts to have local moneys spent on TV receivers matched with federal funds. In the total Channel 13 viewing area, there are approximately 3,000,000 students of whom more than half are enrolled in school systems actively supporting Channel 13's School Television Service.[11] Someone has said that by the end of this decade this powerful educational television signal being transmitted from atop the world's largest building could be viewed by 15,000,000 citizens.

In addition to the growth of broadcasting facilities for school television, the last count indicated there are over five hundred closed-circuit television installations in education in which an estimated 300,000 students were receiving part of their formal education through these systems.[12] This figure has and will grow particularly as states such as South Carolina and Delaware continue to realize their goal of linking all their elementary and secondary schools within their borders via closed-circuit television.

With all this development and growth of television in the schools, it remains questionable to me that American educators are currently able to provide the quality of public education desired by them. It is questionable that states are issuing fewer emergency teaching permits each year and that an adequate supply of our talented youth are entering the teaching profession and will be fully prepared to teach within the decade ahead. Growing population, lack of capital and insufficient training of teachers are steadily sabotaging the rising expectations of Americans--particularly in the lower socio-econommic areas. This seems to be a time in which the affluent society of the United States deprives many of an adequately supported program of public education. William Van Til says it well when he speaks as president of the ASCD, "It is the heyday of the Great Hypocrisy lip worship of education, mouthing concern, and pretentions of zeal for excellence, accompanied by too many local school budget defeats and by national atrophy on broad federal aid to public education."[13]

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[9] National Association of Educational Broadcaster, Washington Report, (Washington, D. C : N.A.E.B. May 15, 1964)

[10] Kenneth J. Lenihan, Utilization of the Regents Educational Television Broadcast Programs, (New York: University, 1963), p. 13.

[11] Educational Broadcasting Corporation, A Narrative Report of Operations, (New York: Channel 13/WNDT-ETV, July 1, 1963-June 30, 1964), p. 13.

[12] Lee E. Campion and Harold E. Wilgren, Studies In the Growth of Instructional Technology, II: A Directory of Closed-Circuit Television Installations in American Education, (Washington: The National Education Association, D.A.V.I., 1963), pp. 31-32.

It is true an operational theory for the use of television in the schools has yet to be formulated. This fact should surprise no one when one considers that television was not seriously tested in elementary and secondary schools prior to 1957.

However, the scope of school television's use and the very nature of the television medium helps, undeniably to bring greater equality of opportunity for all pupils, regardless of socio-economic class. In an underprivileged area or the most wealthy and cultured district, children are able to participate in the same lesson and special events through television. Pupils in small rural schools can have the same variety in courses as do children in larger schools.

I feel that this paper makes evident the fact that television has become a major element in American schools in a relatively brief period of time. Undoubtedly, its role in the future will be even more important than it is today.

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[13] William VanTil, "The Genuine Educational Frontiers," Saturday Review, (April 18, 1964), p. 66.

CLOSED CIRCUIT TELEVISION IN CENTEREACH

Bernard T. Hanley, Centereach

In a medium so new it would seem the best way to greet you all would be.... ....fellow "frustrates" -- it does give me a great deal of pleasure to be able to address you and by so doing attempt to share with you some of my experiences as a person who has been held responsible for the development of educational TV at the Middle Country School District Schools. Often during the struggle and turmoil of developing a closed circuit TV hook-up for our schools, I felt that it was absolutely the worst task that a man ever faced: but suddenly as I face you as an audience I begin to feel that public speaking on ETV is making a challenge for the title of "worst task."

During these past few years I've become quite alarmed over the fact that I find many things difficult to discover, understand, and accomplish. In discussing this with a past friend of mine I was informed it was middle age setting in -- he's probably right but sometimes I hate these fellows who tell the truth. Another thing that has bothered me recently is the fact that where once I could identify conservatives and progressives now I can only find a few good conservatives and the rest aggressives. I'm sure you all know what an aggressive is -- he's the fellow who, when you comment that it takes an open mind to develop educational TV, adds -- an open pocketbook also.

To get down to serious remarks, let me begin by saying that I do not appear here today as an expert or an authority on ETV in any manner, shape, or form -- I'm too close to home to be termed an expert. But I do speak to you today to share my limited experiences and my personal feelings with you. I'm sure there are many of you who are present who know much more about ETV than I. Now that I've established what I am not, I would like to take a moment to tell you where I'm from. Middle Country Central School District #11 is located about 50 miles from here out on Long Island. It takes in the communities of Centereach, Selden, and part of Lake Grove. The communities that are a part of our district are undergoing rapid growth at this time. To give you an idea -- this year's kindergarten class numbered 1,000 and our graduating class numbers approximately 250. The importance of this fact is that while we have a student population of 8,000 today, it is possible, if this rapid rate continues, that our district eventually will have a pupil population of 18,000.

Not too many years ago our local communities were quiet, comfortable, little places with the pace of living more relaxed than at present. It was near the end of this comfortable period and the beginning of the housing boom when ETV was initiated in the Middle Country Schools.

In 1959 - 60 our first facility was readied -- of course it took some selling to the Board and the Community -- but it actually took a lot more imagination and vision, than hindsight for its installtion. Whether or not it was fate, unconcious planning, concious planning, or lack of funds, we started in a way that I now feel was best. We started in one classroom with an attached control room, and the system herein contained was designed for that elementary school building on an experimental basis. One might refer to it as a closed-circuit-closed-circuit hookup. It was an antenna system, but just for that building.

It was in this facility that we (we, meaning myself and a few brave teachers) began to learn for ourselves. We rediscovered many of the things that we had read about, and we discovered some things that were not written about. The important fact was, we were having first-hand experiences for which there are no real substitutes. We learned in every conceivable way, and believe me I'm not ruling out a great many mistakes. At the time we were making them we preferred to use the term "experience" -- it's long enough in the past now however, to admit to them either way.

Probably the first thing that struck home was that there was a great deal more to educational TV than purchasing equipment and getting it to work. The proper operation of TV equipment takes training and experience. After control and use of the basic equipment is mastered, the techniques of production -- starting with a sequential check list to think of before actual programing is attempted -- calls for more study and experimentation. The selection of proper persons for the actual teaching and their training -- and after this knowing the number of hours needed to produce a refined, well organized lesson -- is essential.

Some of you at this point may be confused as to my purpose in pointing out *in detail* the various *musts* before actual refined productions can be accomplished. I am pointing this out for two reasons. First, all these prerequisits were accomplished in a one-room studio in an elementary school. Second, for those of you who may be on the threshold of initiating educational TV in your own district or group of districts, it would behoove you to be congnizant of the requirements necessary before refined productions can be expected. Of course, you can ignore all of these if you can manage to recruit a person who is: one-eighth dramatic coach; one-eighth public speaking coach; one-eighth electronic engineer; one-eighth lighting specialist; one-eighth educator; one-eighth administrator; one-eighth mechanic; and one-eighth electrician -- and who is courageous, thick-skinned, and needs less than two hours of sleep a night.

The interesting part of this experimental phase is that it is so full of surprises it never becomes tedious. In our one-room studio, after initial training and learning, we produced programs in science, spelling and other language arts, music, fine art, and many special events which used community resource people. From these productions we began to see many of the good things that are associated with ETV. Student and teacher interest increased -- the students *in learning*.........the teachers in *methods* of teaching. Pupil achievement in science in our professional judgement improved considerably and was reflected in standardized tests.

Daily and weekly achievement in spelling was improved. Even in art, where one might feel that the lack of color might limit the motivation of students and limit the use of the medium in this particular instructional area, we were pleased to find good to excellent results from the lessons that were presented.

Our ETV allowed the use of community persons, with a minimum amount of time and effort on *their* part. Aside from the value to our students, the resource people in our community developed a rapport and public relations most *desired* and *needed* by *any* school district.

Please remember, all of the aforementioned was happening in a one-room studio, and in one elementary school. Of course, we had our programs that fell flat, that did little to motivate the children to learn, and were crude in comparison to a refined production. We did, however, demonstrate to ourselves and the teachers that ETV was an educational tool, and aid that *could* and *did* improve instruction even on the limited basis that we provided for it in these beginning years. It was from this first laboratory experiment -- actually this is in essence what the one-room studio and one-school antenna system represented -- that the decision was finalized to build future schools in our district with the necessary conduits. Since that time three elementary schools, one junior high, and one senior high have been built, and each with the necessary conduit for TV installations.

In 1961 with the opening of the Newfield High, a second studio was equipped and put into operation. Further study of educational TV as it related to secondary schools has progressed to this time. Special programs which included a series for the literature section of English were produced, as well as a student produced daily news program -- which was a huge success.

During this developmental period, the State Education Department was authorized to expend funds, on a matching basis, to further the progress of educational TV. Because of the foresight, interest, and enthusiasm shown at Centereach for this medium, it was chosen as one of the original ten school districts to be state sponsored.

Another important decision reached during this time was an exhaustive study of antenna micro-wave v.s. coaxial cable. It got to a point where I became an expert on distances between buildings and even the number of telephone poles between our schools, together with their relation to sea-level, or altitude which ever you prefer. There are many studies which emphasize the cost of ETV and while this certainly must be considered, it was my personal experience to find -- with the assistance of many technical people -- that no real comparisons were available to definitely decide which system for closed circuit television was cheapest. As a result of this investigation, which lasted over a period of years, we arrived at the decision to develop a complete system connecting all nine schools of our district with coaxial cable (on an installation-charge-rental-basis from the New York Telephone Company). Thus, this past October 9th, the entire school district was tied together with a centralized studio located in the high school building; this now permits the transmission of lessons and programs from a common center to any or all classrooms in the district. I cannot say enough in the way of praise for the technical assistance given us by the New York Telephone Company.

Another important feature added as a result of our previous experience has been the addition of video tape recorders which allow us to tape our own programs and to play back purchased or loaned tapes from the State Education Department. This addition of tape recorders has made our system over 100% more versatile than before. Future school buildings now being built, and planned, all contain the necessary conduit which will allow for their tie-in with our central studio, and these facilities.

For those of you who fear the work of initiating ETV, you must realize that there are agencies that lend their full support to school districts that are willing to develop their own ETV systems. In our case -- without the assistance of Dr. Lee Campion, and his Department, but especially Ray Graf who is in this Department of Educational Communications in Albany.....and the expert advice and assistance of Dick Deuel, Morris Cohen, and Jim Ermet of the New York Telephone Company -- I'm sure the title of my talk today might have been....."The time we tried ETV." I'm certain that other school districts have had the same experience with other commercial companies and agencies.

In summarizing our experiences for you here today, let me say that ETV as a

part of the total Educational Communications Center concept, so sorely needed by all school districts the nation over, is here to stay. It is no longer an experiment. It is rated a proven tool, an important aid to bringing about the reality of improved and refined instruction. The question that you must ask yourself today is not.....whether you should have educational TV.....but rather -- in what form, what administrative organization, and how soon?

FULLY INTEGRATED AV FRENCH COURSE FOR JUNIOR HIGH SCHOOL

V. V. Kameneff, Tavor Aids

(Presentation of a 16mm sound motion picture "On Parle Francais" produced for the British Ministry of Education by the Educational Foundation for Visual Aids, Lts. of London. Audiovisual Materials by TAVOR Aids.)

Mr. Kameneff (Director of the Firm of TAVOR Aids): This presentation concerns a new audiovisual French course for beginners of Junior High School age. The title of the Course is "Cours Preliminaire de Francais." The course was created in New York and Paris (where all the voice recording took place), and has been on the British market since 1960. Because of its predominant position in British schools today, it was chosen as typical of an audiovisual approach when, early in 1964, the decision was made to produce the film you are about to see. The film is, in fact, a training aid to guide British teachers of French toward some of the techniques that are possible when using integrated audiovisual materials.

We begin therefore with a mixed class aged 11 or 12, who are in their sixth month of French. They have been following the TAVOR course all along. The film is going to take this class through an abbreviated series of sessions, showing bits of all the activities they engage in.

The school is a secondary modern school. It is this category of school to which children go who are considered, after testing at age 11+, to lack aptitude for an academic, college preparatory program. They are thus usually less privileged children of a lower achievement level.

Brighter children go to a grammar school. It was in this sort of school that the TAVOR course was first used, proving most successful for ages 11 - 13, i.e. before it was necessary to revert in the 3rd year to a traditional program of reading, translation and grammar analysis (England is like the U. S. in that, at present, a heavy emphasis is placed in college entrance examinations on achievement in the manipulation of the written language).

In secondary modern classrooms, traditional book courses proved virtually unusable. Audiovisual approaches such as this one made foreign language programs feasible. It has been pointed out to us that these children developed a find esprit de corps upon finding out that they could keep up with the work. The teachers attribute both the success and the favorable morale picture to the development of an approach that was not an intellectual obstacle course, seemingly designed to harass the slower student. Learning to speak this way was like learning a secret code, which you could show off in the school yard. In conclusion, an audiovisual approach, emphasizing oral fluency, is effective both with gifted and less talented children. With the Secondary Modern children, you simply have to proceed at a somewhat slower pace.

The children you are now going to see have never seen any written French in connection with the course. They are illiterate in the foreign language, having concentrated on speaking and understanding. While their pronunciation betrays somewhat their native Lancashire, what is interesting and significant to the language teacher is the largely good intonation and the very good cadence -- the rate of speed approaching that of the native.

Film Clip: The children enter the class. The first activity is a short warm-up. Individual children are called upon at random to answer simple questions: name, age, time of day, home, school, etc. Everything is in French. Then the audiovisual session begins. This section of the lesson is entitled "Ecoutez en francais:" the children listen and watch the screen carefully but do not speak.

Mr. Kameneff: What you have seen is the "exposure phase" of the lesson. In this filmed episode, you are being shown 9 out of about 45 images constituting this lesson. The entire course requires approximately 1,500 of these color cartoons. While they vary considerably in content as the course progresses, the style remains constant: they may seem to you to be like dry geometric sketches, but they are, in fact, a quite successful means of conveying a single concept or a controlled number of concepts.

The accompanying soundtrack was played on the classroom tape recorder. What is striking is that there is a very small variety of statements, or "structures." The variety in the episodes is strictly pictorial, made possible by the substitution of *train* and *bateau* for *autobus*. What we are up to in using this system of recurring episodes is of course making constant repetition palatable, by swapping one "lexical fill-in" for another, and changing the art-work to suit.

Repetition to known patterns is the key to language learning. In the section of the film that follows, you will see this being done. Now, there is nothing inherently exciting about saying the same sentence again and again. It helps to be looking at a picture on the screen (the cartoon character is a sort of surrogate through whom the child can participate in French life before he is linguistically able to live it). It also helps to have a skillful teacher who resorts to the different sorts of tricks you see here to animate the session.

Film Clip: Repetition by the class after each French phrase is heard. The images and the soundtrack are the same as before, except for pauses for repetition in the tape. The teacher signals with a gesture whether he wishes the entire class to repeat chorally, or just the girls, just the boys, or a single individual. Each dialog is heard and repeated three times.

Mr. Kameneff: From here on, the teacher's role becomes increasingly important. Although this is at no time a "push-button" course, the teacher has more of a care-taker role at first, when the audiovisual sessions are going on (he is gathering his forces, as it were, and letting the tape do the shouting). But from this moment on, the teacher takes over. He starts by using the first filmstrip sequence ("Ecoutez") again, together with the soundtrack tape, but in a different way:

Film Clip: An image is projected. The teacher calls on a student to supply the "caption." Then the recorder is started to play back the actual soundtrack as a check on the correctness of the student's effort. Another child is called on to do the same for the next image.

Mr. Kameneff: The exercise you have just seen forces the child to become autonomous. Previously, he was simply parroting the tape. From this point on, the teacher takes charge of the proceedings, working with the class to emphasize the autonomy of each child. He must make sure that every member of the class can make use of the contents of the lesson in a variety of situations.

This particular teacher has two interesting techniques. The first is recreation of the dialogs through a sort of humorous hieroglyphic system of his own invention, obviously very popular with the children. He has to do this since no reading or writing is done during this first year, by the decision of the school.

His other technique is the familiar one of having the class act out dialogs. Rather than memorize lines, the children are simply asked to stick to the general situation and make up details as they go on, just as in real life. Notice the increase in vocabulary and variety of expressions. The teacher has added vocabulary to suit the needs of his students, and the students themselves have asked to be taught certain expressions. Finally, the teacher has shown great originality in having trained individuals in his class to act as "teacher," and trained groups to go through their paces in acting out dialogs with a minimum of prompting by him.

Film Clip: A number of classroom exercises are seen. Departures and arrivals of the various vehicles of the lesson are rehearsed with the aid of a dummy clock. Dialogs are re-created by the students aided by the teacher's use of simplified rapid-fire drawings. Next, students one by one replace the teacher at the blackboard, calling on other individuals to interpret aloud their versions of the teacher's hieroglyphic drawings. Finally, the students pair off to act out a number of situations taught in earlier lessons. The teacher and the class have assembled an impressive number of "props" such as stage money, articles to buy, tickets to sell, etc. to make this activity more vivid. End of film.

PORTABLE TELEVISION IN TEACHER TRAINING

Harold Marder and Edward Berkowitz, New York City

Introduction

The utilization of portable single camera closed-circuit television systems has taken place in selected New York City schools at each educational level since the 1960-61 school year. Thus far, this form of intra-school television has been used predominantly for teacher training. This reflects a felt-need in a city with 45,000 teachers and a school system which is committed to consistent self-improvement. Schools having the TV equipment are located strategically throughout the five boroughs of the City. The portable closed circuit television system commonly called a "minimal rig," has been used for either pre-service student-teacher training, in-service teacher-training, or for preparing teachers and supervisors for forth-coming examinations. This system was introduced into the schools by the Bureau of Audiovisual Instruction under the direction of Dr. Edward G. Bernard.

This form of television has been accepted for use as a teacher-training device because the rig has enabled a larger audience to view demonstration lessons than would be possible under ordinary classroom conditions. The producers of telecasts can utilize the selective view of the television camera to highlight specific aspects of a lesson. A commentary can be made to direct the viewers' attention to specific classroom situations during group TV, observation without interrupting the classroom teacher. Because of its portable construction, the "minimal rig" can be moved from one school to another as the need arises. The "minimal rig" enables an audience to view a lesson within a school. The atmosphere of the school is preserved so that the audience is not removed from the learning enrivonment where the demonstration is taking place as would be the case with open circuit television.

What is the "minimal rig" closed circuit television system?

This portable single camera closed circuit television chain was modeled after those one camera systems developed by the Navy and used by the State Education Department. The system, while admittedly minimal, allows for achieving the values of in-school CCTV without necessitating a large outlay for personnel, equipment and permanent installations.

The "minimal rig" consists of one industrial, non-viewfinder, vidicon camera with a zoom lens capable of normal, wide angle and close-up views; a tripod and dolly; an audio mixer to integrate sound from as many as four microphones, and an audio-video mixer which sends picture and sound signals over the necessary distribution cables. Two simple light bars are included, but it has been the practice to use available light.

The limits placed on the use of this "minimal rig" are governed by what a single camera can see and the capability of its audio components. This system provides for either direct viewing within an "originating classroom" or for remote viewing in another "receiving room." Usually the television camera, microphones, and other originating equipment are placed in one classroom where the cameraman uses a standard television receiver to monitor the picture which is telecast to as many as three other television receivers located in one or more adjacent classrooms.

A diagram of the complete system is included in Figure (1). The cost of the "minimal rig" is approximately $3,000.

What has been done in the City schools?

Thus far, twelve schools have used this form of closed-circuit television. The utilization of the "minimal rig" for teacher-training can be exemplified by programs currently in operation in P. S. 22, Richmond, Harold G. Campbell Junior High School, Queens, and P. S. 86, The Bronx. The Richmond School serves as a district teacher-training center. Here a committee of teachers and supervisors have been selected to prepare model lessons to be viewed by new teachers. Demonstrations take place each month. The committee has shown some act of teaching, pupil-teacher interaction, or some aspect of methodology as closely as the television medium permits.

Campbell is a campus school offering extensive pre-service training in association with nearby Queens College. Through the use of CCTV large groups of "participant" students who are beginning to major in education are able to observe actual classroom lessons. Experienced teachers in the school give special demonstration lessons to illustrate teaching techniques. The four assistant principals in this school have become familiar with television by working on model lessons with teachers in their respective areas. An expert teacher in French gave a model lesson to illustrate the audio-lingual approach. Television was effective in demonstrating pronunciation and pattern drills for members of the language department. (There were demonstrations of interview techniques, illustrations of classroom routines, class management and teacher-class relations.)

Another school following a similar pattern, had a series of six demonstrations which were conducted to orient teachers and student teachers to the techniques of an individualized reading approach.

P. S. 86, The Bronx, is an elementary school in a more favored area of the city located on the same street as Hunter College. The television installation was more elaborate in this school during the first year of our project, than in other schools since an originating room was interconnected to receivers in three adjacent rooms, the maximum for this rig. The principal demonstrated the flexibility of our system as a teacher-training device in many interesting ways. For example: A speech lesson using small group instruction for young lispers was given in the originating classroom. In the three observation rooms viewers watched while a discussion leader directed the attention of the audience to important items. In one room were the Director of Speech Improvement and regularly appointed speech teachers; student teachers and classroom teachers observed in other rooms. Thus, the same viewing experience was suited to the varying needs of different audiences. At a district conference on spelling, supervisors and parents observed in the second room and college students observed in the third.

One use of the single camera equipment was for guidance demonstrations. The equipment was used in a fixed position without a cameraman. Successive interviews of children were held by a guidance counselor. A viewing audience of teachers and guidance personnel were then able to analyze the interview.

Another important use of the equipment is related to the preparation of teachers and supervisors for forthcoming examinations. This service is employed at all schools where the equipment is located. It serves as an excellent review for people who will be responsible for evaluating classroom teaching.

Conclusion

This low cost unit has served as a practical and effective instrument to assist us in the training and recruitment of teachers and supervisors, especially when the "minimal rig" used within its limitations. One problem has been a tendency to try to over-reach the capabilities of the equipment. It tends to arouse a desire on the part of local school personnel for more sophisticated equipment.

The allocation of the eight rigs to campus schools serving as demonstration research centers for local colleges and to schools designated as district centers serves to justify the use of television for this type of training. Many student teachers and newly appointed teachers have received a background in such key curriculum areas as reading, science, mathematics, and social studies. The flexibility of the portable unit demonstrated its capabilities to serve almost anywhere in the City. The equipment has been used creatively for guidance in lieu of a one-way vision room. Personnel with no prior television experience can be trained to operate and instruct over this system in a brief period of time. In fact, some of the most effective forms of teacher-training have come about during the periods when teachers and cameramen have been able to effectively work together in the preparation of a telecast. This device serves to identify talented teachers and to make use of the services of designated experts who have district or city-wide responsibilities.

The use of video recording devices and master antenna distribution systems within newly built schools will enable the Bureau of Audiovisual Instruction to extend the horizons of in-school telecasting. This minimal portable closed circuit television system, although limited, serves to bridge the gap in the technological revolution that is changing the face of education today. Schools which use this equipment have obtained valuable experience with a dramatic medium which serves special needs at a self-scheduled time.

THE TV TEACHER AND THE PRODUCER-DIRECTOR: THEIR ROLES ON THE TEAM

Jay M. Brill, Plainedge

The "On-the-Air" sign goes off- the air conditioning unit goes back on, (shut off during programs because it makes too much noise) and the producer-director, namely myself......

1. Rush into the studio and congratulates the teacher on the tremendous job he or she has done. A great, award-winning, instructional sound, instructional lesson, visually exciting program! Everybody is happy!
2. I stroll into the studio, correct the mistakes of the crew members, and casually let the studio teacher know that the program went without any major technical interference or mishaps. What I don't voice is: "Second half of the program was awful, it just fell apart. You didn't listen to my suggestions and the results came out to be dull television." What I don't hear from the teacher (that is, not that day anyway) is: "Second half of the program was perfect, too bad I listened to him on the presentation and pacing of the first half. The first part was complicated, unnecessary, dull, not even on the subject I wanted to teach..." or,
3. I stay in the control room knowing that the program was not a good one and the technical work was no better. I see the studio teacher rush off to the schools for follow-up lessons. He knows what I know. I quickly think about the next days programs. Maybe Irene Dailey is coming or Norman Thomas, or some other less temperamental established star.

My topic for this session, "The Producer-Director and the Studio Teacher Their Roles on the Team."

My remarks are based on my experience as Producer-Director for the Plainedge Public Schools. The team is comprised of the studio teachers who work for our system, Mr. Levy, the AV Director, myself, and the many other people at our school who help.

Before we investigate how the producer-director and the studio teacher work together, and what their respective tasks are, let us focus our attention on the selection of the studio teacher. We try to choose......

A. Someone who has a good knowledge and competency in his subject field. However, the teacher doesn't have to be an expert, or the chairman of a department or even a scholar. He must be extremely knowledgeable and comfortable with his subject material area so that research in new material and current literature can be emphasized instead of the basics. Factual information is not enough.
B. We need someone who has an imaginative and creative approach to teaching; someone who is classified as an exciting teacher, one who has skill in interesting the student audience and in varying the presentations or lessons. We all have our subjective analysis of what makes a good TV teacher, but there is usually consensus of opinion when a teacher is on the screen who I would call telegenic,

meaning one who "comes through". Can we find these people?

C. When selecting studio teachers, it is best to offer the assignment on a voluntary basis to the entire school system. Let everyone feel that they have an equal opportunity to work in this new area of teaching, in exploring a new and vibrant teaching method. I would suggest the following means of selection:
   1. Meeting of all aspirants with producer-director to briefly discuss auditions. Some facts about TV utilization discussed, and directions for writing a ten minute telelesson are given.
   2. Viewing the presentations with the aid of a committee; membership possibly consisting of an AV director, producer-director, department head, director of elementary education or a secondary school administrator. Narrow selection to two or three teachers based on performance.
   3. Giving them some additional time and information, and continuing the competition until a teacher is selected.
   4. If you fail to come up with a competent person from your own system, and you are determined to teach the subject via television - advertise, audition and select a teacher from outside of the district. We have no right to choose a mediocre teacher who will be teaching hundreds or thousands of students and who will be imitated by scores of other teachers. Mediocrity in the classroom is bad enough; let's keep it there if we must, but let us not spread it around.

Assuming that a teacher is chosen to work in the studio, let us now turn our attention to the demands that will be made of this person. The first demand is that the teacher be able to switch his format and presentation from that of a classroom lesson to that of a television format. At this state the producer-director becomes the teacher and helps the studio teacher to make this conversion.

I ask them to choose a lesson and list: topic, objective, factual information, what kind of presentation would he or she use, pacing, visuals, etc.

The same lesson is taken and they are shown the variations and possibilities including:

A. Camera capabilities...angles, lenses, groupings, movements
B. Requirements of color, contrast, size, art work limitations, textures
C. AV tools and their application to TV - opaque projector, filmstrips, audio tapes, overhead projection, control room projection facilities
D. Different pacing patterns including the use of visuals for pacing effects, films insertion, physical movement, set design
E. The way we outline a script, and then write it up on a script form, separating the audio portion from the video

To summarize: The studio teacher is entering a new world, and must be made to realize the potentialities as well as the shortcomings of the medium. He must know what TV will do for him and what he must do to take advantage of this miracle tool. It is the producer-director who functions as his instructor.

ILLUSTRATION:

This is a brief discussion of just one Channel 6 production. It will show how many people working together were able to accomplish the objectives of the studio teacher.

Program: Science
Topic: Biology, The Cell
Objectives: To teach the physical appearance of cells. That cells are three dimensional.
Producer-Director...contributed opening...using microscope and egg crates
Studio Teacher...contributed lesson material, use of certain props, conception for utilizing the three dimensional aspect of the studio set
AV Director...contributed ideas for props
Producer-Director...guided art staff to make models of cells
Lesson created in which the out of focus device of TV contributed to the presentation of cells, (plastic bags, pots of jello, etc.) as three dimensional units.

The telelesson utilized.....imagination, contributions from various team members, rehearsal time and planning time. Testing and comments from audience showed us that we accomplished our objectives.
Additional duties of the studio teacher:

Syllabus and course outline must be prepared in addition to workshops and study guides to accompany each lesson. At Plainedge the secretarial staff is short of help and the studio teacher most often has to type, mimeograph and collate all of the materials. This is a tremendous task and should not be the job of the studio teacher. The producer-director can assist in a minor way by freeing some of the student crew to help out in these tasks.

Artists are not always available, and the studio teacher often has to do the art work for the program. Here the use of projection equipment to aid in making graphics comes in handy, along with a picture file we are developing, and the many lettering aids we have collected. The producer-director functions as a resource person for the teacher who is looking for materials for a telelesson.

Testing via television is another form of a TV lesson at Plainedge. On the suggestion of the producer-director, teachers conduct tests via TV. Programs must be carefully organized, answer sheets distributed and the papers must be graded by the studio teacher.

Television demands that teachers be assigned on a full time basis in order to accomplish the tasks I have mentioned. However, one of the most important tasks or jobs of the studio teacher, one that takes up considerable time and energy, hasn't even been mentioned. I refer to the teaching of follow-up lessons in the classrooms throughout the district.

Even at Plainedge, with our six elementary schools, this becomes an almost impossible task. The teacher tends to visit those schools and those classes that:

A. Request her presence, either to review some work or to go ahead and introduce supplemental work
B. Try out material that will later be incorporated into TV lessons
C. Do student and teacher reactions to past lessons
D. Evaluate lessons and pacing while watching tapes of lessons with students
E. May have talented students for a program

The Producer-Director has a job in this phase of the project in developing and issuing evaluation forms. I ask questions concerning the technical aspects of the reception as well as questions directed to students and teachers concerning the interest levels, the pacing, the clarity of instruction, the use of visuals, etc.

The most difficult situation to bridge, and a situation which is ever present is in the working relationship that develops between the producer-director and the studio teacher. The fact is that the teachers have been working behind closed doors for so long and they have been their own bosses. Very few people have criticized their work, and, if they have, suggestions could just as well be ignored as taken up. Contrasted to this is the situation in which the producer-director passes judgement on many facets of the telelesson and makes many suggestions. The suggestions are sometimes very numerous, and if some of them aren't used, an irrate producer-director exists. So, from complete freedom to a working partnership is something that takes lots of time and patience. My opening statement could be re-read here to emphasize that sometimes it is a smooth relationship and at other times it is a ruffled, angry one.

One must remember that the studio teacher is under great pressure: working in a new medium; having to please a producer-director and being watdhed by thousands of students and countless number of peers and colleagues (including the superintendent of schools and the director of elementary education and the many guests that visit our project daily).

The role of the producer-director is to help the studio teacher do a great job. Dull gray teachers in front of dull gray curtains makes for dull gray television. In trying to combat this, the producer-director calls on his teaching skills, his audiovisual skills, his television experience, and a great quantity of human endurance and energy to help teachers accomplish their goals. When the studio teacher is satisfied with a telecast, meaning it was well paced, clear, visually exciting, involved the students, technically perfect,....the producer-director is most often satisfied too.

A final word of advice and caution to those of you who are thinking about setting up an instructional TV project:

A. Assign or hire the best for television teaching
B. Make it a full time job, with summer work, if possible
C. Provide funds for resource materials
D. Give the teacher support by providing an art staff and art materials
E. Find a producer-director who has plenty of energy

MEDIA AND MATERIALS DISTRIBUTION SERVICE: VIDEO TAPES

Norbert Nathanson, State Education Department

One of the newest and most used services of the New York State Education Department is a library of video tape and kinescope programs which have been produced for the State Education Department by various educational television councils in the state, and which are now available on free loan basis to all educational institutions in the state of New York.

This service was organized and instituted in order to attain maximum use of television and film programs produced by the educational television councils on contract and funded by the State Education Department. In addition to considerable reuse by the councils for rebroadcast purposes, the programs are used in considerable quantity by various school systems and/or higher educational institutions which either own or have access to video tape machines.

Since there are two basic types of video tape machines currently in use in educational and instructional television (professional broadcast model and the slant-track or helical scan machine), the Department is making existing programing available on tapes to fit either machine. In most instances this requires dubbing programs from one type of video tape to another. In addition to in-state use, these programs are also receiving considerable notice out of state, where they are being played by educational television organizations. In such instances a slight charge is made. For the purposes of making the video tape library easily available to educators in New York State, an Educational Media-Materials Distribution Service catalog has been printed in loose-leaf form and will be made available upon request from the Bureau of Mass Communications, Division of Educational Communications, State Education Department, Albany, New York. In order that the Department not be required to maintain either duplicate copies of any given program or series of programs or large quantities of raw tape stock, all requests for program use must be accompanied by blank 2-inch slant-track tape in sufficient quantities for dubbing the requested programs. At the end of usage time, tape can be re-used for additional requests or blank tape may be returned to the requesting agency.

All tapes listed in the catalog, which at this writing is in excess of one million dollars worth of programs, are available for play-back on either transverse or slant-track scan, and all slant-track copies will be made on the Ampex VTR. In addition to the taped program a teacher manual for each series is available upon request for some of the programs or series.

The video tape holdings of the Department will be subject to deletions from time to time as programing becomes outmoded or no longer timely; acquisitions are added in considerable number yearly and new data sheets are issued periodically to the mailing list of catalog holders.

TELEVISION COUNCIL ACTIVITIES

Norbert Nathanson, State Education Department

In 1952 immediately following the release by the Federal Communications Commission of its assignment of television channels and reservations, the Board of Regents requested and received the reservation of ten channels for non-commercial educational television projecting a plan for a state-wide network of stations to serve the educational needs of the people in New York State.

The backbone of the New York State educational television plan outlined basically in the Glen Starlin report entitled Television and Higher Education is the development of local educational television councils which will eventually be connected by a microwave network which will allow educational television programing to be originated at any given council and distributed simultaneously across the state. Basically, the Starlin Report envisions a 4-phase development starting with the cities located along the New York State Thruway (Buffalo, Rochester, Syracuse, Albany, New York City); a microwave link system would interconnect these stations on a two-way basis. As other stations are added in other phases of the development, additional microwave will be added to facilitate their being a part of the state network. The stations located along the Thruway would by themselves reach 88% of the population of the state.

The local councils are the key to the state network. In New York State an educational television council is a non-profit cooperative structure chartered by the New York State Board of Regents and licensed by the Federal Communications Commission to broadcast non-commercial educational programing on an assigned television channel. There are nine councils presently existing, in New York State, at various degrees of development. Three, Buffalo, WNED; Schenectady, WMHT; and New York City, WNDT, are currently operating broadcast stations; three, Rochester, Syracuse and Long Island are in such stages of development as to justify the expectations of their being "on the air" within the next twelve months; the remaining councils, Binghamton, Watertown, and Corning, are currently involved on the more basic problems of organization and funding. In addition to the nine above specified councils, there is a considerable activity in the formation of new councils in Ithaca and Poughkeepsie.

It should be noted that the nine existing councils whether or not they are "on the air" as channel-assigned broadcast educational television stations are all programing educational television to their respective schools and communities. Those which are not broadcast stations via local commercial stations on donated time, and in one instance the medium of dissemination is a community antenna system. Of the nine, six councils produce programs which become a part of the Educational Media-Materials Distribution Service and through this service are available to educational institutions throughout the state.

Councils are charged with the prior responsibility of serving their community with both in-school and adult educational and cultural programing. Each council, when possible, contracts with local schools to use council programing. By cooperative efforts the schools determine and recommend to the council those needs which can be satisfied by television programing, supply television teachers, content and curriculum experts, and frequently necessary props and equipment. The council in-school programing, in all cases, reflects the curriculum needs of schools of the community that the council serves. Similarly, the adult cultural program reflects the needs and interests of the community at large.

The councils acts as a production center as well as a dissemination point. They produce programs for local use or for state-wide or national use. They may contract with any non-commercial agency to produce programs to satisfy that agency's needs. They contract to produce programs for the New York State Education Department through the Division of Educational Communications. The procedure of selective contracting of programs on the part of the State Education Department follows a cooperative sequence of council proposal, department evaluation and selection, council evaluation and selection and final contract. New York State Education Department contracted with ETV Councils in the 1964 - 65 fiscal year for programs worth $340,000.

In order that communities interested in bringing educational broadcast television to their area be advised of the required procedures, the Division of Educational Communications has published a pamphlet "Establishing Educational Television Councils: A Manual for Procedure" which is available upon request from the Bureau of Mass Communications, Division of Educational Communications, State Education Department, Albany, New York. This, together with Law Pamphlet 9 "Inauguration of Educational Institutions by the Regent" comprises a legally sound, well organized, and operational reference point for council organization. In addition, the members of the Bureau of Mass Communications and in particular the Associate for Educational Television (councils) stand ready to consult with any groups interested in exploring the possibilities of establishing an educational television council in their community.

instructional films

ESTABLISHMENT OF REGIONAL FILM LIBRARIES

David J. Rees, State Education Department

I think we can all agree that the motion picture is a marvelous invention and that it has great educational value. Our problem is to encourage its correct utilization. In order to encourage correct utilization you must first have the film and the means to project it. The Department believes that the local educational communications specialist, who works closely with the teacher, is best situated to stimulate correct use. It is the Department's function to devise means to increase the amount of film and film equipment in the state. It is also the Department's function to analyze and to project the implications inherent in the technological advances effecting the motion picture. I would first like to explain the Department's action in attempting to increase the quantity of available film.

Dr. Walter Crewson, Associate Commissioner for Elementary, Secondary and Adult Education for the state has stated:

> It is my contention that we have not yet realized the maximum instructional potential of the motion picture. Good films, prudently selected and correctly used by the teacher are unquestionably effective teaching materials. I would therefore urge school administrators to seek all means by which teachers may have convenient access to larger selections of films. In this regard, considering the cost of film, it might be well for administrators to investigate the possibilities of merging resources to create regional film libraries. The local control of such expanded film libraries should afford the teacher an efficient and economical source of this valuable teaching material.

The Department feels that all school districts with the exception of the six large city districts should look toward the pooling of their film resources under the existing administrative units of the Boards of Cooperative Educational Services. It should be also mentioned that the Department is not opposed to individual school districts owning their own film. School districts that find they have high rates of use for certain films should certainly, if they feel it is necessary, own such films. The Department feels that the division of school owned and Boards of Cooperative Educational Services owned films will be adjusted in accordance with local needs.

To encourage the creation of regional libraries and the expansion of existing regional libraries, the Department last year inaugurated a special aid plan for film. BOCES, under this plan, receive annual aid according to their reimbursement rates for 50% of all film purchased up to $20,000. They also receive aid for the salary of a Director of Educational Communications ahd a clerk assistant. Equipment, supplies and the rental of space for the operation of the film library are also aided. The recent expansion of NDEA money to BOCES is also applicable.

There are 74 BOCES in the state. Since the Department's plan has been in effect, six BOCES have started film libraries which brings to a total of sixteen BOCES film libraries now in operation. These six new BOCES film libraries have increased the quantity of film in the state by approximately 2,200 prints and brings to a total of approximately 11,500 prints owned by all BOCES. Five additional BOCES are now comtemplating the establishment of film libraries. If by the end of this school year these become operational, their addition will probably bring another 2000 prints into circulation and increase the number of BOCES film libraries to twenty-one.

An example of the advantages of a regional BOCES film library might be in order. Let us say there are four school districts located within a 30 mile radius. Each district decides to spend $3,000 on film. Matching funds from NDEA will double their $3,000 to $6,000, and, if we use an average of $100 per film, each district will be able to buy 60 films. Their individual purchases will bring to their region 240 films. However, it must be pointed out, that a teacher in that region will only have a selection of 60 films.

Now suppose the same four school districts decided to invest their total of $12,000 into a BOCES regional film library. By doing so they could acquire through NDEA and the state plan, 160 additional films for a total of 400 films in the region. A teacher would now have a selection of 400 films instead of 60. It is hoped by the Department that the BOCES plan will greatly aid in increasing the amount of instructional films available to teachers.

In conclusion in reference to regional film libraries, I should mention that aside from the economics of the BOCES, the Department envisions the regional film library as the nucleus of a communications center. Film was chosen as the initial step because it represents a large capital outlay; however, under, we trust, the capable guidance of a certified Director of Educational Communications. The BOCES film program should lead to expansion in other communications areas. The BOCES Director of Educational Communications should function in a complementary capacity to the school Director of Educational Communications. The BOCES should be the center for the inservice training of teachers in the use of the new media, for various media innovations, for the reproduction of instructional material, and for all other activities requiring large investments in capital and space.

I should now like to direct my remarks to the second function of the Department in this area of the motion picture; to analyze and to project the implications inherent in the technological advances affecting the motion picture.

What I have been saying regarding regional film libraries amounts to a matter of logistics and economics concerning an existing material. If the motion picture is to achieve its full potential as an instructional material more than the traffic of film must be considered.

A large step in the improvement of use would be the elimination of 16mm motion picture film as the predominant size. Its bulkiness dictates that large and heavy projectors be used in the classroom. These projectors are expensive and, in spite of self-threading, complicated to use. Consider also the can and container in which film is shipped. A fiber board carton with metal edges and two cloth straps: inside a can which teachers sometimes cannot open. Film comes to the teacher today the same way it did thirty years ago. You can consider the film container as indicative of the stagnation of thought regarding film. I imagine that any of 25 plastics could be used for one neat container to replace can and carton. Yet, we still accept the same shoddy present arrangement. There seems to be a complacency concerning 16mm film. We think of shipping it around. Of sharing it. Of preventing damage to it. Of projectors on which to show it. But we never, it seems to me, think of changing it.

Fortunately a change will occur in the near future, and that is the advent of the 8mm film. I envision the next five years will place us in a transitional period. During this time the 8mm film will gradually replace the 16 in the classroom. Schools will have both, but the 16mm films and equipment will be replaced as they wear out with 8mm film and equipment. At present a high speed printer is all that is really needed to initiate the first impact of 8mm. Films, from the sheer necessity of business, will be at least three to four times as plentiful as they are today. We all know that it will still cost relatively the same to produce a film. The difference will be in quantity prints.

There is also another factor to consider when one thinks of 8mm, and that is that the film will have a market other than the schools. Large quantities of 8mm film are today sold for the amateur use in making home movies. It is not inconceivable to consider than an 8mm optical sound projector will be developed for this home market, and that popular films will be reduced to 8mm after they have had their major theater runs. This broader market will be advantageous to the schools because large volume sales will allow low purchase costs.

Instructional 8mm films might probably be divided into two main categories; those that are for general classroom instruction and those designed for individual instruction. Of the general classroom category, there might possibly be packages of films, such as a series of three films on a given unit of instruction, one film as initial introduction of subject matter, another as reinforcement, and a third as a participation film or individual instruction review film. Imagination would be the only limit to the uses and refinements that could be found for the 8mm motion picture once production is stimulated and competition becomes accelerated.

8mm projectors should be light and considered consummable; that is, they should never undergo any major repair. They should be made cheap enough so that a school might buy 10 times as many as they would 16mm projectors. They should all be cartridge load, and the cartridge should be the shipping container. That is to say that the cartridge should be of such durable construction that it need not be placed in a carton or box for shipping.

We are today in the genesis of what I have described. There is a complete language course available on 8mm film. There are cartridge load projectors and there are numerous films available for these projectors. There is under development high speed printers; 8mm optical sound projectors are also under development.

In conclusion, I would like to state that I foresee the acceptance of 8mm as the renaissance of instructional film. I believe that we should do all we can to hasten this renaissance.

CUSTOMIZE YOUR CLASSROOM FILMS

John A. Davis, Geneseo

The present decade has been characterized as a time of explosions. "The population explosion," "the knowledge explosion," and "the technological explosion" are familiar phrases testifying to the rapid increase in students, subject matter, and teaching materials that are inundating today's classrooms. The educator's task in such a time is to evaluate and select from the wealth of materials those which are most effective in communicating to the ever-growing number of students the information they require.

The "explosion" of new teaching materials may be exemplified by the greatly expanded availability of instructional motion pictures, with new titles offered to schools almost daily. Instructional films have been subjected to a greater quantity of research than any comparable medium of instructional communication; yet, inconsistencies of communication effectiveness persist. Regular use of films in the classroom is still far from universal practice.

One of the problems confronting the user of classroom films is the fact that the great majority of such films are produced for distribution to a mass market. They are enrichment films designed primarily to bring otherwise remote experiences into the classroom. They are made by a producer who has no way of knowing what his audience brings to the film--what they already know--nor what they will go on to learn.

The wealth of literature on classroom film research has given the teacher several important guidelines to solving this problem. It has been shown, for example, that students learn more from seeing a film twice than just once. They learn more if the teacher introduces the film, anticipating its content and directing attention to key-words and concepts. It may be valuable to stop the film for discussion in the middle, or to reshow certain scenes. Review exercises, evaluations, and follow-up activities all are known to increase the amount students learn from a film. It is no great surprise that the most impressive learning gains result when students are engaged in a program that precedes the film showing by use of a study guide, follows the showing with a test, discusses the film again the following day, reshows it, and repeats the test.

But if one of the advantages we claim for film is a saving of teaching time, the program I just described is a pretty poor example. Good teachers are now used to previewing and planning their use of films, but to commit this much teaching time to a given film is asking quite a lot unless the film presents something of unusual value. In fact, I suspect that many potentially valuable film experiences are bypassed just because of this time factor.

Recently people have been seeking efficient ways to overcome this problem. Many interesting approaches have emerged. One approach is to produce films in integrated series. Each film builds upon the information imparted by the previous film and leads, in turn, toward the next film. Examples of this approach are found in the P.S.S.C. films, which are coordinated with each other and with a wealth of other teaching materials. Another approach was described to this Convocation last year by Dr. Richard Hubbard--the use of a multiple screen technique with slides or transparencies appearing alongside the motion picture on the screen. These approaches are fresh and exhilarating, it seems to me, and their impact is being felt all across the State.

But what about the school that has neither the facilities nor the personnel to use multiscreen techniques? What can we do for the teacher who, for one reason or another, cannot use a whole film series in her teaching? What can be done to enable us to get more efficient teaching from a film that is not part of a series, but which contains a valuable experience we want our students to have? Short of treating the film as the focal point of the lesson, how can we improve the teaching milage we get from an "enrichment" film?

At Syracuse University this past year a series of explorations was made in developing a technique which may hold promise. The technique consists of flashing messages onto the screen superimposed upon the picture, as the film is run. These messages deal with the film content, and may either reinforce or supplement information the film is developing. More important, the messages can easily be formulated and produced at the local level, so that they can better integrate a film into the school's curriculum.

I'd like to describe the development and testing of this technique for you, and suggest how it might be used in a classroom.

First, let's consider what kind of messages one might superimpose upon a film. By using short verbal phrases, we may send messages to reinforce or update vocabulary, to suggest topic headings, or to show the spelling of a word used in the sound track. This may sound very much like the use of subtitles in foreign movies or on television. But there are some important differences, as we shall see.

In developing the technique it was important to show that viewers were receiving information from the superimposed messages and not guessing from the film itself. To accomplish this we chose a film in two versions, and wrote a comprehensive test based on the longer version. A group of students who saw the condensed version were unable to answer several questions that viewers of the longer film could answer. Analysis of the films verified that these questions dealt with information not contained in the shorter version of the film. The messages to be superimposed were then taken from this enrichment material in the longer film. It was reasoned that if viewers of the short film could answer questions about this material correctly, they must have gotten the information from the superimposed messages.

The next considerations were mechanical. How long should the messages be on screen? How often need they be repeated to insure communication? How could their placement in the film context be controlled? These were really the key questions whose solutions were to result in the technique.

The messages were printed on 2" X 2" slides which were shown to randomly selected students via a tachistoscopic projector. Each person was shown the messages at successively slower speeds until he could correctly identify the message. The average of these exposure times was then the basis for deciding how long each message should be on the screen--in this case, 1/4th of a second.

At that rapid an exposure there was a real possibility that viewers might miss the messages--blink at the wrong time and you miss a question on the test! Obviously the message should be repeated. But how many times? Previous research was of little help here. Traditional experiments simply left a message on the screen an average duration of 1/2 second per word--or longer. Experiments in message-flashing had repeated one message continuously for the length of the film. Our problem was resolved by choosing segments of film where a supplemental message would be directly relevant to the film context for the longest period of time. Four such segments were found, each one minute in length. Saying the messages aloud, which was done for the aural portion of the experiment, took approximately one and a half seconds, suggesting a limit to repetition space of two seconds. Thus, the messages were repeated thirty times in one minute, one repetition every two seconds. This pattern was followed for both the visual and aural sets of messages, so that the numbers of repetitions of the visual messages and aural messages were the same.

A simple, acceptable way to control the placement and duration of all these messages was to commit them to motion picture film. By means of single frame exposure, a film was made with six frames of messages, 42 frames of black, thirty times for each message. The sound portions were recorded on magnastripe, and the message sections were placed in a reel of opaque leader spaced so that they would appear at the appropriate contexts in the instructional film. Punch marks at the beginning of the instructional film and the message film assured synchronization of the two films, and the two motion picture projectors started at the same instant through a common power cord.

We showed the film, BY MAP AND COMPASS, to four groups of college students who had been tested for their previous knowledge of the subject. One group got just the film, no supplemental flashes of any kind. A second group saw the film with supplemental visual messages. A third group got their messages by ear--from the sound recorded on the magnastripe. The fourth group got messages both visually and aurally. All were given a 50-item test about the film and message content immediately after seeing the film.

The results of these tests provided some very interesting comparisons. The groups that received the supplemental messages were able to answer the test questions about the message information; people in the groups that received no supplemental messages could only guess at the answers. This indicated that messages sent by superimposition were indeed received by the film viewers and recognized in the answer phrases to the multiple-choice questions. This was true for all three types of superimposition--visual, aural, and aural-visual.

Was any one mode of superimposition more effective than the others? The results showed a decided advantage for visual superimposition over aural superimposition. It was even more effective in this experiment than the combined aural-visual presentation, possibly because the aural superimposition was a bit distracting. Remember that in the aural superimposition the viewers heard the same phrase repeated thirty times in one minute. In the aural-visual presentation they both heard and saw the phrase. Hearing the same phrase that often in that space of time might understandably become tedious!

What are the limitations of this technique, as shown by the experiment? Unfortunately there was one prominent limitation. The analysis of the responses to the test questions indicated that many viewers received the superimposed information at the cost of other information in the film. Scores on the total test for all groups were about the same, where theoretically the groups receiving superimposed messages should have scored higher. The superimposition of supplemental messages upon the film presentation made a difference not in amount but in kind of information received by the viewer. This is in keeping with previous research findings in which emphasized points in a film are recalled at the expense of other points.

There is an important footnote to add here. Post-experiment discussions with the students indicated that the amount of repetition of each message could be greatly reduced without endangering the probability of communication. This was particularly true of the aural superimposition, but also true for the visual flashes. A series of follow-up studies is presently under way in the hope that refinement of the technique will result in communication of superimposed messages without interference to the film's information.

However, I'm not here to tell you we think we're GOING TO have something useful; I think we have something useful right now. The superimposition of supplemental information at its present stage of development is a simple means for providing "selective emphasis" of information relative to a given instructional film. I think the technique could well be used, for example, to emphasize certain words or phrases linked with key concepts in a film. The emphasis would occur when the words are repeated during the film showing instead of before and after the film. New vocabulary could be provided by supplemental messages. Important terms, or names for people or places, things or concepts shown in the film, could be reinforced in this way. Labels and categories for concepts, procedures, or situations shown in the film could be provided by the superimposition technique. This might be of particular value in analysing filmed examples of communication or human relations situations, in studies such as speech, group processes, human development, persuasion, or general semantics. I can see the same sort of approach in teaching motion picture or television studio techniques, or appreciation of art, music, film, or drama. You could even suggest cues to an outline organisation of the film by superimposing messages.

The present limitation of the technique could also be turned to instructional advantage. If superimposed messages communicate at the expense of the material under them, this technique could be used to supplant erroneous or outdated references.

Of course, the greatest usefulness of the superimposition technique will come when and if we can overcome the interference factor. Then it is possible that several supplemental messages could be sent during a film, tying the film information to material the class had already studied or was about to study, or relating a film from one field to subject matter in another field. It is even possible, I suppose, that with superimposed supplemental material we could actually double the amount of information students received from a single film showing! The potentialities are fascinating!

Probably the most important contribution of this technique for superimposing supplemental information is its technical simplicity. Supplemental messages for a film could be quickly and inexpensively prepared by a local audiovisual center. The equipment required includes a 16mm motion picture camera capable of single-frame exposures, and an editing synchronizer. Standard 16mm motion picture film and opaque leader constitute the stock of film footage which should be long enough to present the desired messages at the places appropriate in the instructional film. If precise placement of the messages in the film context is not essential, you could use 8mm motion picture facilities. Or if you wish to use aural superimposition rather than visual, a tape recorder could do the job.

With this comparatively simple equipment a school system, or perhaps an individual school, could create supplemental message films to meet its own educational requirements in adapting films to the needs of their particular students or their curricula. Different sets of supplemental messages could be prepared for the same film so its use in different grade levels would be feasible depending upon the level of the content in the supplemental film. To simultaneously present the instructional film and its appropriate supplemental messages, the teacher would simply use two motion picture projectors, or a projector and tape recorder.

So here is a new way to adapt a good general enrichment film to meet the needs of particular students without using an inordinate amount of teaching time. This technique of rapidly superimposing supplemental messages is a way to customize your classroom films.

CREATING AN ACTIVE FILM AUDIENCE

John M. Culkin, S.J., Fordham University

The man in Time said it: "The movies have suddenly and powerfully emerged as a new and brilliant international art, indeed as perhaps the central and characteristic art of the age...The new generation of moviegoers believes that an educated man must be cinemate as well as literate". An age that is becoming increasingly dominated by the projected image faces the cultural imperative of training taste and judgement in films and television. Reasons both positive and negative urge us to the task.

The Educational Policies Commission of the National Education Association said it: "In the light of the time spent by today's student with the media of mass communication, some study of these media and the communication process is essential...A considerable body of research literature which provides the basis for teaching how to watch and listen is emerging, although established curriculum patterns are still rare. The need for such teaching, however, is everywhere."

Film study is to motion pictures what a literature course is to books. It is a systematic attempt to develop in students the habits of analysis, understanding, and appreciation which will make them selective and intelligent moviegoers. It involves an exposure to excellence within the medium and it studies both the content and the form of the medium. It encourages cross-media comparisons with novels, plays, and television. It operates out of a basic respect for, not a fear of, its medium.

Dr. Stuart Selby's recent doctoral dissertation at Columbia documents the history of film study in the American high school --- a flurry of activity during the 1930's, a petering out during the war, ten post-war years of silence, and now a renewed interest on the part of teachers. The reasons behind these basic phases are explained elsewhere, but for present purposes the fact is that teachers are interested and that the idea lacks not motivation but classroom-tested programs. Teachers don't quite know where to get started. The vacuous chapters inserted in most literature tests are useless; there is nothing in print which vaguely approaches a curriculum design for the high school teacher.

Two recent programs of action which attempted to bring together the worlds of film and education may be of interest.

a. The Young People's Film Festival of New York. The title suggests the tone of this event -- an honest and non-condescending effort to make film relevant and understood to the student in the way that Leonard Bernstein has treated music. For five days in August 1964, 500 high school students from the public and private schools of New York City saw five feature films and discussed them with the makers of the films. The project was sponsored by Mayor Wagner, financed by the Brookdale Foundation, coordinated by a Mayor's Committee consisting of representatives of the Office of Cultural Affairs, the Mayor's office, the Bureau of Audio-Visual Instruction, the Motion Picture Association of America, the Hollywood Museum, and Fordham University.

The schedule of films and speakers tells the whole exciting story:

1) David and Lisa - discussed with Director Frank Perry, Writer Eleanor Perry, and Actress Diane Baker
2) To Kill a Mockingbird - discussed with Screenwriter Horton Foote
3) The Hustler - discussed with Director Robert Rossen
4) Seven Brides for Seven Brothers - discussed with Singer-Actor Howard Keel
5) The Miracle Worker - discussed with Director Arthur Penn

A few of the many comments of the students will give a feel for the generally enthusiastic reaction. Actually the most enthusiastic response came from the motion picture talent, many of whom were meeting this type of concerned audience for the first time.

Student Comments

"I learned more about motion pictures in this one week than I have in my whole life. I have learned how to judge and experience great moments in films and to love films as art."

"The festival is a marvelous idea. For the sake of teenage America - Keep it up!"

"I feel honored that people like Mr. Keel, Mr. Rossen, etc., should take interest in the young audience."

There were no dissenting voices. The lasting value of the festival will be in the precedent it set for bringing together the creative talent of both the film world and the schools. Film has been called "a shotgun marriage of commerce and culture." Any movement based on film must emulate this union. The festival got them hitched without the shotgun.

This is far too brief a description of a nationally significant event, but it will keep contributing to the film study movement by reminding us that we can involve the makers of film in the film study movement. The festival showed that they want to be involved.

b. Film Study Course at Newton South High School. The Selby thesis mentioned above could not mention one film curriculum which could be used as a prototype for interested high school teachers. To fill this gap, I took on such a project as my doctoral thesis at Harvard. And to give it the practical bent required of the idea, I taught the course for six weeks to 30 sophomores at Newton South High School in Massachusetts. This gave me a good look at both the theoretical and practical aspects of film study.

Not all of the experiment can be recorded here. In the enviable position of one reporting on his own activity, I can optimistically say that the idea came through as being both academically desirable and administratively feasible. The school is training ten teachers to continue the program next year. In outline form I will sketch some of my own postulates and then indicate the program itself.

1) Film courses must be built on films.
2) Films used should represent both feature and short films.
3) Films should be well-made and of interest to students.
4) Discussion of films should be student-oriented, non-directive.
5) Stress should be placed on the medium itself, on the way it communicates.
6) The medium involves sound (dialogue, music, sound effects), motion (subject, camera, cutting), pictures (frame, composition, tone).
7) Cross-media comparisons are most fruitful: books made into films, films based on plays and TV shows. (Best example is Caine Mutiny which was book, stage play, film, TV play -- and in each version media and audience changes brought about a change in the protagonist of the story).

The weekly schedule allowed for five hours of teaching time. The program lasted six weeks. I chose these units, not because all of film can be taught in six weeks, but because I felt that a 30 hour unit would serve as a practical curricular module for teachers wanting to teach film as a unit within another course, as a separate subject, or as an extra-curricular activity. On Monday of each week two hours were devoted to the screening of a feature film. One hour was spent discussing this film. One hour was devoted to some positive teaching of the grammar of the film, film history, or film genres. The final hour of the week centered around the screening and discussion of shorter films.

The feature films used in the program were: High Noon, On the Waterfront, La Strada, Seven Brides for Seven Brothers, Raisin in the Sun, The Caine Mutiny, Citizen Kane, and To Kill a Mockingbird. (That adds up to eight; we couldn't bear to break up a winning combination after only six weeks.) Shorter films included Lonely Boy, Fiddle De Dee, Neighbors, Telling a Story in Pictures, The Golden Age of Comedy, and several films made by high school students in England.

The experience deepened my conviction of the need and worth of film study. It also pointed up the desperate need we have for teaching materials both filmed and printed. We need excerpts of feature films for intensive study, still shots, films that teach about film (lighting, cutting, camera perspective, etc.). We need kits of printed material containing comments by film-makers, critical reviews, articles. Any teacher entering the movement now has to develop almost all the needed materials.

The idea will become a legitimate movement when we have trained teachers and adequate teaching materials. Few colleges (I count three - Fordham, Notre Dame, and Boston University) are directly engaged in training teachers for high school film study programs. The Communication Arts Department of these three schools will be delighted to hear from interested teachers. Contact Professor Edward Fischer at Notre Dame, Professor Anthony Hodgkinson at Boston University and the speaker at Fordham. It's a worthwhile idea. Someone will be shaping the movement and the students. If not you, who? If not now, when?

PRIORITIES AND TARGETS IN FILM SERVICE

Henry J. Queen, New York City Board of Education

The sound motion picture makes possible educational communication in certain areas in which no other medium is effective. These areas are:

- recreating past events
- compressing action time through time lapse photography
- providing motion analysis by means of high speed photography
- recreating dangerous, expensive and highly skilled performances
- making small moving objects visible by microphotography
- making large moving objects comprehensible by macrophotography
- illustrating interdependence, function and invisible phenomena by animation
- bringing distant lands and peoples to the classroom

An example of the degree of availability of motion pictures to communicate in a field noted for its abstraction can be seen in the seventh year course of study in mathematics.

Topic	Correlated Film
The Meaning of Integers	How Man Learned to Count
Extension of Number System	Big Numbers, Little Numbers
Roman Number System	Story of Our Number System
Rounding off Numbers	None
Fundamental Operations, Integers	
Addition and Subtraction	None
Multiplication	Multiplication is Easy
Division	None
Fundamental Operations, Fractions	
Meaning of Fractions	Introduction to Fractions
Meaning of Factor and Applicato Fractional Equivalence	How to Change Fractions
Addition and Subtraction, Fractions	How to Add Fractions How to Subtract Fractions
Multiplication of Fractions	How to Multiply Fractions
Division of Fractions--Inversion	How to Divide Fractions
Fundamental Operations, Decimals	Idea of Numbers
Meaning	Decimal Fractions
Operations	Decimals are Easy
Percent	
Meaning	Meaning of Percentage
Conversions and Operations	Percentage

Topic	Correlated Film
Measurement	
Length	Let's Measure: Inches, Feet, Yards
Precision of Measurement	None
Perimeters and Areas	Area and Perimeter Measuring Areas: Square and Rectangle
Scale Drawing	None
Graphs	Language of Grapns
Geometric Forms	
Recognition of Geometric Solids	Solids in the World Around Us
Plane Figures	None
Lines and Angles	Parallel Lines What's the Angle?
The Circle	None
The Angle	
Lines	What's the Angle
Measurement and Types	None
The Triangle	Similar Triangles in Use
Applications to Life	How to Find the Answer Arithmetic: Estimating and Checking Arithmetic: Understanding the Problem
Mathematics in the Home	The Family Budget
Business Practices	None
Banking	Using the Bank Fred Meets the Bank

Some would offer alternative aids for these topics. They should not be alternatives but supplements. The poor state of mathematics instruction today is the result of reliance on a single medium for all applications rather than recognizing that all media have limitations of application.

Present Status of the Motion Picture Medium

The motion picture film medium of instruction has shown a healthy growth over the past ten years. The following comparison indicates the quantitative expansion:

Item	1953	1964
Sound Motion Picture Projectors	1,630	3,569
Sound Motion Picture Prints not including kinescopes		
in Central Loan	410	11,796
in Field Centers	11,000	24,000
Annual Classroom Showings	200,000 Classes	600,000 Classes
Available Titles, Central Loan	n.a.	2,607

Not apparent from these statistics is the improved utilization practices of the teachers. Ten years ago a common request received by the AV Coordinator was for "a twenty-minute film on any entertaining topic." Such requests are rare today and field supervisors are reporting increasing evidence of specific motion picture films being listed as an integral part of individual teacher's lesson plans. Three factors are probably responsible for this desirable trend: The organization of field and central film catalogues on a subject area and grade level basis with teacher-designed annotation, the issuance of motion picture resource lists geared to specific problems and areas of instruction, and the gradual easing of the problem of access to materials and equipment to teachers.

The Future

There are many problems that inhibit optimum utilization of motion pictures by teachers in their work. However, it may be stated without reservation that real progress is being made or is in sight on all the basic difficulties. The remainder of this paper will be devoted to a discussion of each of these problems and what is being done about them.

1. Film in Better Condition

70,502 films were distributed during 1963-64 from Central Loan. 140 cases of film failure for mechanical reasons were reported. These failures were traced to damage suffered during one of the multiple showings of the film during the booking. Teams of film inspectors assigned to rehabilitate field center collections report that half of the films cannot be projected without an interrupted presentation. The startling difference in quality is a result of the inspection and maintenance practices. In Central Loan every film is inspected, cleaned and necessary repairs made between each booking by skilled personnel. In the field centers there are no regularly assigned personnel. Classroom teachers are assigned the task on time taken from their teaching duties. As a result, the Central Loan prints have a life expectancy of ten years, the time of their educational usefulness, whereas field center film has a useful life of only three years.

To provide teachers with film in mechanically perfect condition, the Bureau is following a plan of film consolidation as rapidly as space and personnel become available.

2. Improved Access to Film

The present system of centralized film distribution is a result of high print cost and the necessity for specialized inspection and maintenance procedures. Ideally films should be as accessible as books and therefore should be deposited in the school. Two recent developments will help make this goal possible. The Bureau has been testing the durability of cartridge 8mm films and although they are not as foolproof as claims indicate, they might prove serviceable in school use. Another limitation at present, is the fact that the film used in the cartridges has a magnetic sound track which does not lend itself to economical mass duplication. We have been advised that an acceptable optical track will be offered in the near future. As soon as this last development is available we have been assured that the film producers will make their product available in the reduced size at substantially reduced prices. The second development is the automatic threading device available for the 16mm sound projector. Again this minimises film damage and may make it possible to set up local collections of the basic film material.

The latter alternative raises the question as to the point at which it is as economical to place a print in a school as it is to distribute it from a central location. The maximum number of showings for centrally distributed prints is 24 times a year and the annual audience for such a film is 1200 children. Since the typical elementary school has 150 children on a grade level and a basic film should be shown at least three times to the same audience, it would appear that a film suitable for a two-year grade span should probably be placed in the school. Certainly the series of films on fractions would meet this criterion. A by-product of this policy would be to make available materials for individualised instruction of children. The State University at Stony Brook has placed the PSSC Physics films on the shelves of their Physics reference room and provides four self-threading projectors on tables. Students use the films as they feel the need for the material. Also available on the same basis are a number of 8mm sound film cartridges and one cartridge-loaded Fairchild sound projector. The students find the material very helpful but the project is still in too early a stage for evaluation.

3. Equipment Reliability and Effectiveness

One has only to compare sound motion picture projectors manufactured ten years ago with today's models to appreciate the improvements that have been made. They are lighter in weight, have fewer and better marked controls, higher light output from improved lamps, more light on the screen because of more efficient optics and easier threading patterns. The recent advent of self-threading projectors as mentioned earlier is another step in the direction of simplicity. The Bureau is equipping ten schools with these projectors to see how they stand up in service as compared with standard type projectors.

The twin problems of room light control and ventilation are being minimized by the improved light output of the projectors. In some locations where the problems are acute, the Bureau is trying several models of rear screen projection. The cartridge-loaded projectors use rear projection as a standard and therefore may eliminate the problem altogether.

4. Filling the Gaps

A conservative estimate indicates that 12,000 basic titles would be needed to cover the essential topics of the curriculum that require the communications technique described in the first part of this talk. Examing the 7th year mathematics film coverage more critically we are aware of the complete absence of detailed topical treatment. It is estimated that approximately

100 basic films should be used instead of the 29 listed. The fact is that this particular area has had the advantage of the impetus of N. D. E. A. financing points up to the extent that coverage is inadequate in other curriculum areas.

Aside from the formal curriculum topics there is the vast area of human relations that sorely needs implementation through attitudes that can best be built through the motion picture medium. Dissenters to this viewpoint probably also discount the role that the entertainment motion picture and television program plays in the moral decline among the youth around us. Our own motion picture unit is concerned with this problem and the second half of this session will be devoted to the role they have assumed in helping meet the needs of the disadvantaged child and the minority groups in the city.

In conclusion I would like to call to your attention a few thoughts from page 1 of a recent Curriculum Bulletin on "Reading." It is pointed out that the assumption that if a child is taught word recognition comprehension will follow naturally is a fallacy. It goes on to say that reading is too closely allied to the thinking process to be considered merely a simple or single ability. We would like you to consider that this complexity permeates the entire area of communications and that it is rather shortsighted to neglect multisensory tools of communication in favor of single sensory approaches. The climate of opinion and practice is typified by teachers who will not use the motion picture medium because of mechanical imperfections or material shortage, but who persist in using mutilated texts over twenty years old and compensate for shortages by duplicating the missing material by hand.

FILM FOR RAISING THE SELF-IMAGE OF THE DISADVANTAGED

Herman Jacobs, New York City

The Bureau of Audiovisual Instruction of the City of New York is currently providing a series of guidance films called the "If You Believe in Yourself" series. It is being produced for the Human Relations Unit and the Bureau of Educational and Vocational Guidance. The purpose of these films is to encourage and assist disadvantaged children of varied backgrounds. They will present interviews and visits with successful people in various professional and occupational fields who have overcome difficulties and handicaps in achieving their present status.

While the content of each film will be limited to a specific occupational area, the series will by no means be solely career oriented. It is directed, rather, at the elimination of the myth that impoverishment and defeatism are a heritage of minority groups. The task is not a simple one. The undesirable predisposition of the target audience is deeply rooted in an historically biased and projudicial past. The perpetuation of this fiction in the present, is one of the most serious blocks to the hopes and aspirations of these minority peoples.

Through the "If You Believe in Yourself" series, we will bring to our school children many examples of successes and gratifications in the lives of their adult counterparts. The underlying technique of eye-witness reporting will endow these examples with an air of veracity and believability. We hope that this will result in a strong indentity of the children in the audience with the people presented in the film.

The shortcomings of the eye-witness interview, however, were apparent to us in the early planning stages. Yet, we were not willing to forego this vital, truthful, on-the-spot method of portraying desirable experiences. We knew that our target audience was picture, rather than language minded. We knew that these children had to be motivated by dynamic visuals and by entertaining and engrossing stories.

For our first production, Harriet Garamone, out guidance consultant with a decided talent for writing, developed a script that combined the essential interviews with a story form film and made them part of an interesting continuity. Yesterday, the answer print was rushed in from the laboratories. It was previewed by the project committee and is about to receive its premier screening by you.

It is called "The Doctor Ortiz Story" and is based on the life of Doctor Gilbert Ortiz, now working in a city hospital where much of the story was filmed. Strange as it may seem to you, the story was written first; we found Doctor Ortiz later. The important characters are real and are called by their real names. The interviewees appear at their regular work locations and give unrehearsed answers to questions put to them by fifth grade children.

The project committee for the entire series of films consists of the following people:

Dr. Edward G. Bernard -- Director of the Bureau of Audiovisual Instruction.

Daisy K. Shaw -- Director of the Bureau of Educational and Vocational Guidance.

Frederick H. Williams -- Director of the Human Relations Unit.

Dr. Clifford Ettinger -- Supervisor of Educational Motion Picture Production.

Harriet Garramone -- Script writer and guidance consultant.

Rufus Shorter -- Human relations consultant.

Herman Jacobs -- Producer of the "If You Believe In Yourself" series.

THE TECHNOLOGY OF FILM REJUVENATION

Ivan M. Ellis, Comprehensive Filmtreat Inc.

To many of you the term film rejuvenation may sound strange. But the concept this treatment describes is as old as motion picture film itself and it is used by every motion picture company.

Literally, the word rejuvenation means "bring back to youthful strength and appearance." I am going to talk with you about a systematic approach to bringing back the strength and appearance of the films in your library. While none of you may approach the millions of dollars that Paramount Pictures or Walt Disney Productions or Metro Goldwyn Mayer, or the other major companies save in print costs, this time-tested way to protect your film investment is worth knowing about.

This much I can tell you now, film rejuvenation is not merely a set of chemical treatments, but the know how of catching the symptoms of old age and systematically treating the film to bring back the vitality of youth, the sparkle of color brilliance, and the cleanliness of newness.

We can all use a little rejuvenation and I'm sure each of us knows what to do about putting some pep, vim and vitality back into our everyday lives. But what of the 16mm prints that you have in your film libraries for which you have spent thousands of dollars. When do you put this pep, vim and vitality back into these prints?

Of course, there is an easy way out. You can discard the prints when they become so damaged that they no longer run smoothly through a projector, promptly go out into the market and buy others to replace them. But let's analyze this thought. Let us assume the print you discard is 800' in color. To replace it in today's market would cost you as much as $185. This same 800' to rejuvenate would cost you as little as $13. So you see, to rejuvenate would cost you less than 10% of the replacement cost. Sounds wonderful, doesn't it?

SLIDE #1: Here is the typical life span of a motion picture print in regular use. Up to this point your film continues to project in good condition and very little if any scratches or film damage will show from this point down to here. From this point on the film has become so scratched and in such a state of disrepair that the cost of saving these prints is uneconomical. Now that leaves this area between here and here. This is where our laboratory can successfully prolong the life of your film through the technology of this film rejuvenation. If we receive prints that fall in this area, we can, by the (application of the film)technology add to the longevity of the motion picture prints in your film library because we clean out imbedded dirt as well as surface soil. We remove scratches and give corrective treatment for brittleness, buckle and curl, and as a bonus we give a protective treatment, which makes for a smoother projection and because of the antistatic qualities in the chemicals helps prevent dirt from accumulating in the aperature gate.

SLIDE #2: What you have seen here has been a few examples of what you might rightfully consider to be minor symptoms of wear and tear, anyone of which if neglected can result in extensive damage to your film. The lesson of this slide is obvious, to put it tritely, don't wait too late to rejuvenate.

SLIDE #3: Now let us review briefly some of the noticeable and not so obvious symptoms of wear and tear. What would you say is wrong with this slide? Nothing. At first glance you are right, except of course for the blurred picture which you might attribute to the projector being out of focus.

But this projector is not our of focus. The film is. The strip film in this slide is badly buckled which means that it does not lie flat when it passes through the projector gate. This phenomenon is a natural result of shrinkage which is a normal symptom of wear and tear.

SLIDE #4: If you can read the figures on this shrinkage gauge you will note that the film being measured has a shrinkage of over 1% which is not at all uncommon in prints. If the shrinkage is distributed unevenly across the width or along the length of the print, the image will go in and out of focus in projection such as you saw in the previous slide. Quite frequently films with more than 1% shrinkage will chatter in the gate. The next visual tells you the harmful effect this condition has on the life of the print.

SLIDE #5: Do you notice the slight nicks on the perforations? These frequently result from stress on the film due to shrinkage. Extensive perforation damage is costly to correct, shrinkage is not.

SLIDE #6: Here is something I'm sure you are all too familiar with. Poorly made splices. Every splice is a potential breaking point and it is especially so if the splice is made as sloppily as the one you see on this slide. Splices properly made reduce the likelihood of splices coming apart and you minimize missing footage in your print.

SLIDE #7 and #7A: Let us consider for a moment the appearance of your film. There may be some here who are not deeply concerned with the appearance of the film on the screen as long as the film runs through the projector. But, by and large, when you have invested a sizeable sum in a print, you want that print to retain the sparkling, brilliant image it projected when it was new. For those of you who don't, let me say this. Dirt and scratches on the screen are a sure sign of trouble ahead. It's a rare day when we receive prints from an Educational Library with heavy scratches and abrasions that do not also suffer from some degree of shrinkage, damaged perforations and weakened splices. Any one of which defects can end the life of a film without warning. To pile a cliche on to cliche "a word to the wise is sufficient, a stitch in time saves nine."

SLIDE #8: The value of rejuvenation is now established, but just what is rejuvenation? To over-simplify it, rejuvenation consists of two stages, detection and correction. Here is how we do it.

The first step is examination of a print by an expert film technician. He looks for two things, the obvious existing damage and the not so obvious. Then his inspection report is prepared with recommendations for corrective action.

The decision whether or not to rejuvenate revolves around the question: Is the expenditure justified? If the film is still in nearly perfect condition, the answer to this question is no. If, at the other extreme the film is so badly damaged as to require a lot of visual repairs, the answer may again be no. It may depend not only on the condition of the film itself, but on the availability of replacement and on the remaining usefulness of the film's content. The latter, of course, is a matter of curricula judgment.

SLIDE #9: Here is a typical report (explain the various entries and what they mean) I might add here that no work is done at any time until the inspection report is gone over with the customer, either on the phone, or in person, so that we can discuss what action is necessary on questionable prints.

SLIDE #10: To go into a description of what the corrective phase of rejuvenation involved may be too lengthy and technical for the occasion. Let me just show you the photograph of a precision controlled high-speed machine used in chemical treatment of motion picture prints. As you can see, rejuvenation of motion picture film is no do-it-yourself project.

But there is an important role that the film library plays that can increase the value of every dollar spent for rejuvenation. We have conducted an extensive survey of educational and institutional film library facilities. The most outstanding fact that we have gleaned from this survey is that very few audiovisual departments have the time, the personnel, nor the equipment adequately to inspect prints after each booking. As I said earlier, rejuvenation consists of two phases, detection and correction. In our lab we have the facilities to correct the defects we have been talking about. Let's talk for a moment on the all important subject of detection.

The most economical way of performing this function is in your own library. At the conclusion of my talk one of our technicians will demonstrate some of the techniques for detecting signs of wear and tear in your film. Perhaps after you see them at work you will wish you could borrow them to help you set up a systematic rejuvenation program in your library, which begins with economical do-it-yourself inspection. We are announcing for the first time a field service program that will make your wish a reality. We will send out to any organization an expert 16mm film technician direct from our laboratory. This technician's function will be to orient your film inspectors and teach them various laboratory techniques, little tricks in splicing, in repairing damaged perforations, how to handle film, how to detect the presence of scratches on motion picture film and classify them light, medium or heavy so that they will know, and you will know, it is time to get a specific print treated before it becomes too late for rejuvenation.

If you will remember the visuals you have just seen, and specifically recall these that had dirt, scratches, torn perforations, nicked perforations and other forms of damage, all of this can be controlled through periodic inspection of your prints and our field service program is designed for such inspection.

Let's summarize -- film rejuvenation is of more than a set of chemical treatments. It is a philosophy -- correct defects while they are minor and inexpensive to correct. Ten dollars spent for rejuvenation can spare you an expenditure of fifteen times that for replacement. The secret to gaining full value of film rejuvenation lies in the timing. I cannot give you a stock answer to the question when should film be rejuvenated. This depends on such factors as how well the teachers and students are trained to operate a projector, how carefully your film is examined after each booking, and how frequently it is cleaned. An audiovisual director I know quite well once described the benefits of film rejuvenation in eight words: "It costs so little, it saves so much."

Now I can stand here all night and go on ad infinitum on why you should have your films rejuvenated, or even more important, avail yourself of our field service program, but in order to save time, I have, through the courtesy of Dr. Charles Luminati, AV Director of Great Neck School System, been given a print in color, which Dr. Luminati picked at random from his film library and graciously gave me to use. I am not going to show you the whole, but for the record, we have spliced out the first 150', and treated the rest of the print as if it came into our laboratory on a regular job. Then we spliced back this 150' of untreated film. This demonstration will last approximately three minutes, thirty seconds, and you will see demonstrated the problems about which I have been talking.

production

A TECHNIQUE FOR DEVELOPING LOCAL AUDIOVISUAL PRESENTATIONS

Roger S. Hall, Boy Scouts of America

I come before you as a 'furriner'....not only because I'm from the wild and wooly outland district of New Jersey, out there across the Hudson....... but also because, strictly speaking, I'm now an educator to an organization which, because of its volunteer training activities, has been called the largest independent adult education program in the country.

If I were to ask how many of this audience are or have been among those scouting volunteers who have been trained, as commissioners, den mothers, explorer advisors, council presidents, or whatever -- I suspect I would get quite a show of hands. I have here an array of manuals -- a mere fraction of the total number -- which illustrate the kind of training we do. I show you these and tell you all this, not to boast, but to lead into my subject. I am a member of the staff of National Council, Boy Scouts or America. More specifically, I am an AV specialist in our Visual Education Service, responsible for the production of most of the filmstrips and other visual materials which are part of these volunteer training sessions. Our Service has complete staff and facilities for planning and producing visuals of most every kind, including a large sound stage for motion picture production. It is with the planning process that I am concerned here, because it is out of our planning procedure that this technique for developing local production grew.

About four years ago, our Service was the object of an intense scrutiny by our Research Service. They analysed our planning and production, our sales and service, and how our products were being used -- or misused -- across the country. Their report recommended many things, among them a very detailed systematic procedure for planning. And a feature of this planning procedure was a worksheet. It's really a series of worksheets, totalling 13 pages in all. In minute detail, it guides a task committee through many tough chewey questions, about the purpose, audience, contents, use, promotion, etc., of the proposed visual. It sometimes keeps a task committee busy over a total of eight hours, arriving at basic agreements. I shall not attempt ot describe it here. What is important right now is the role this worksheet played (albeit unknowingly) in an area completely unrelated to Scouting, but quite closely related to your interests -- the public schools.

I live in Plainfield, New Jersey. Since I have two youngsters in the public schools there, I try to keep in reasonably close touch with the teachers and the administration and conditions generally. Shortly after this worksheet was developed, the president of the city-wide PTA described to me a problem, and knowing my interest in AV affairs, suggested I talk to Superintendent Podesta about it. I was, and I did. Vic Podesta had a *real* problem: to 'sell' a new and somewhat costly idea for the curriculum to those who held the pursestrings. The new idea was an integrated (if you'll pardon the expression) elementary school library system, to be developed over a period of five years. *He* thought it was a good idea; his staff certainly did, and the PTA had been beating the drums for it for several years. His Board said, in effect, if you and your staff think so, so do we. Put it in the budget. And they did. The catch was that the budget had to be approved by the city's Common Council, whose members were very economy-minded, and who thought this new idea was a "frill." No amount of explaining or statistics or philosophizing could dent them. Could I help develop some sort of a slide presentation to do the job?

My instincts told me to tackle this thing the way we did at the office -- although obviously not in such detail. So --

(Slide #1)

-- one evening I found myself meeting with the assistant superintendent of schools -- not in his office, but at the instructional materials center. AV materials play a relatively progressive role in the Plainfield school system, and the center has several facilities for local production -- copy stands, tape recorders in the semi-professional range, cameras, etc.

(Slide #2)

Joe Ennis, assistant, had been given the assignment of representing administration. He not only filled me in on what they wanted, but also warned of pitfalls, such as what might happen if we were not objective and tried to 'sell' it in a high-powered manner. He also had some pet ideas as to what should go into this thing.

(Slide #3)

He had not been too enthusiastic about my proposal to follow a modified form of the planning worksheets, so I had decided to try a different approach. I brought along a storyboard used by our staff writers at the office, and decided to try it as a "planning-board." I had explained how we'd need some resource-people right now, before we started, in order to shape up a presentation. I had said that I could probably go ahead on my own, do research, and write a creditable script, but that there was more involved here. Besides, I didn't have the time!

(Slide #4)

So Mrs. Ruth Wellman, a trained elementary school librarian whom the administration was considering as the co-ordinator of the proposed project, found herself seated at the table with us --

(Slide #5)

-- along with Caryl Dunavan, the director of the system's instructional materials center. Some of you know "Dunny," I believe, from his many years of service in New Jersey and in DAVI nationally. This was in '61, and he's since retired -- officially, at least -- though he still cannot keep from getting involved in AV!

(Slide #6)

Our next step was a planning-board session. Much more is involved here than meets the eye -- and its success depends on how willing the various people involved are to think and be specific.

Four points were put up on the board at one time, so that their relationship to each other could be seen at all times:

(Slide #7)

The Problem....The Purpose....The Audience....The Circumstances. Each one was examined separately and in depth -- and continually cross-referenced with the others. For instance, what was our basic problem? We had a story to tell which had some educational philosophy behind it. We had the passive support of the school board, without whose active backing the Council would not be impressed. So that affected our primary audience, which now became the Board. These were busy people, with not much time to listen to anything in depth.

(Slide #8)

I am really 'capsullizing,' as the Madison Avenue people would say. Just examining the problem took a long time. Then, in light of that problem, what was our purpose? Obviously, in a short time, and with one slide presentation, we had ti intrigue and stir up the thinking of some busy men who went to school in another era, and, while intelligent, did not comprehend a certain philosophy or technique or learning.

(Slide #9)

It went with the other topics of "Audience" and "Circumstances." You'll note that the topic of "Content" was not included. This consideration was inevitable, but it quite rightly came last. Mrs. Wellman, having sat through the planning session, was able to furnish the right information at the right time. Then she and the script-writer were backed up by the Rutgers University Library School, who were of great help.

This planning phase took quite a bit of time -- two evenings, in fact. Our notes were voluminous, but we decided that any recitation of facts or costs should be kept to a minimum. We did have to analyze and point up the basic philosophy and explain how it could be implemented, but, since some rather competent people would be present to answer questions, we left the "tough ones" to them. Essentially, we decided upon a very simple 'story-line' about how a pupil had a study-problem, and how she got the answers.

(Slide #10)

Then we were joined by Dick Betz, an art instructor in the Plainfield schools. He brought with him not only an ability to sketch, but also a lively imagination, and it was with his help that the presentation really took shape.

(Slide #11)

He was able to grasp quickly the story-line we had in mind, and to visualize the various points we wanted to make.

(Slide #12)

This was a new experience for Dick. Mind you, he had no script or story to illustrate. The pictures were coming first, with only brief notations under each one. Can you blame him for scratching his head? Sometimes Joe Ennis would suggest an idea --

(Slide #13)

and then I would chime in with something. We didn't necessarily follow a sequence, but tried to visualize ideas as they occurred to us.

(Slide #14)

The presentation began to develop, however disconnectedly. The beauty of it was everyone was involved; everyone could see the thing developing, the relationship of one part to another, and where we were 'overloading' or where the big 'holes' were. Lacking an artist, we could have scratched notes or crude sketches on cards and put them up there. Joe Ennis wanted to shoe-horn in quite a few 'messages,' but as you will see in a moment, the cause of good communication triumphed -- or did it?

(Slide #15)

This is a sample sketch -- the first frame of our storyboard, as it turned out. After we had filled the board with all we could, we were fortunate to secure the services of an experienced script-writer, Bob Johnson, from North Plainfield, to elaborate upon the sketches, to rearrange then, and to further sketches (if needed).

This was a new experience for him, too. I suspect he rather resented being handed an array of sketches and being told to "write the narration." But he went ahead and created the narration anyway.

I could talk for some time about the relationship of a creative person to this kind of process, but perhaps you will want to pursue this later. I shall also have to pass over all too quickly the role of Caryl Dunavan in making the photos and other visuals called for by our story board, in recording the narration, and in putting the whole thing together, after the rest of us had long since gone back to our regular jobs. (Hear Tape).

Those of you who have had any experience in planning and production may at first have some negative reactions to this little presentation. One might be: "So what's new?" Admitted, there's nothing new in the planning technique itself. Every competent producer uses it. But sometimes "It ain't what you do -- it's the way that you do it!" We were able to use a non-professional version of a professional technique.

Another reaction might be: "Technically, it isn't exactly a John Ford Hollywood production!" Granted -- and we didn't want it to be. The inexpensive 'local' look was important. Anything pretentious or gaudy would have lessened our communication with our audience, who recognized a home-town product when they saw it.

Well -- how well did it communicate with its audience. Did it accomplish what it was supposed to do? It was shown to the Board; they took it upon themselves to show it to some of the members of the Common Council, and at the Council's budget session, where other items are being cut 'across the board,' this new library item was voted in with only a slight reduction.

This effectiveness was not due to any special talent of any of us, but to two 'facts of life,' you might say: (1) We were willing and able to sit down and chew over the who, what, when, where, why and how of our project, ahead of time, and (2) We involved all related people in the drawing up of a blueprint which everyone could understand and follow.

There are also some less-obvious features in this technique: (1) The planning-board becomes a sounding-board, or arbiter, before which everyone is equal. It's a kind of 'third force,' where personalities and politics are played down. Joe Ennis, the boss, was 'one of the gang,' throwing up ideas. As you well know, status and rank can be a real problem in such a conference. (2) The technique is flexible. It can be used to design an ambitious sound motion picture, or it can help to develop an informal overhead presentation for the classroom. (3) Most appealing to the over-worked AV man, I think, is the feature that, the planning board, once completed, becomes a kind of automatic control board, or blueprint, which can be assigned piecemeal to the various specialists involved in the production, with very little overall control needed. You can literally deal out the finished storyboard cards like a deck of playing cards, to artists, photographers, writers, whoever -- and go back to your desk.

So -- you too can be a producer - director. Not exactly an 'instant' one, but what does John Ford have that you don't have -- besides six million dollars?

THE ANATOMY OF A GRAPHICS COMMUNICATION CENTER FOR LOCAL PRODUCTION

George Wiesner, State Education Department

Over on 57th Street there is a film showing entitled "Anatomy of a Marriage." The most unusual thing about this film is that it is two films; one tells the husband's story at the Little Carnegie; the other which gives the wife's side of the story is told at the Cinema Rendez-Vous. One ticket admits you to both theatres.

Well, the "Anatomy of a Graphics Communications Center" is likewise being presented in two parts. Earlier today, we presented the "Romance of the Overhead Projector;" and, this evening, "Can an Honest but Hardworking AV Coordinator Be Happy in the Role of Director of a Graphics Communications Center?"

Let me begin by describing an aspect of the world in which we live which I feel is pertinent to this discussion. We are going through a time which could be revolutionary in the true sense of the word. We are experiencing a Communications Revolution. The need to communicate has never been greater. The emerging nations of the world are for the first time establishing a dialogue with their neighbors and with their former landlords. Genuine lines of communication are being drawn up, at long last, between the races of this country. The communications satellite system is becoming a reality. The Washington-Moscow "hot-line" exists. The test ban treaty is evidence that the East and West can communicate.

And under this major weather system, we have the familiar routine of life in the United States, where I suspect that television sets outnumber bathtubs - with color TV here, and with home video-tape recorders around the corner. Every family has its photographer and its own projectionist. Even the littlest ones have their "Give-A-Show" projectors. There are children's Book-of-the-Month Clubs, Record-of-the-Month Clubs, and Children's Digest. There are magazines for Mom, for Dad, for teenagers. There are paperback editions of hard covers, and hard cover editions of paperbacks. There are reproductions of Matisse in the supermarket, with or without brushstrokes.

And so we live in a graphic world. We're surrounded and inundated.

If, in our classrooms, the educational experience is to successfully compete for the enthusiasm of our young people, then there must be a full commitment to modern methods of communication. Anything less will cause the school encounter to appear lack-lustred when compared with the other adventures in our graphic world.

Education is highly susceptible to being swept along by trends. This spring in Rochester, the DAVI conference theme was "Creativity in Education." The ripples which teaching machines made are no longer visible. There are trumpets being sounded for Ethics education, for the disadvantaged, for the gifted, for a return to individualized learning experiences.

If I may take the liberty to insert my oar into the Education Pond, I would like to create a ripple which would bear the following inscription - "Motivation Through Graphic Involvement." The failure to motivate is one of the more serious problems facing our educational establishment. I believe that the motivational power of involvement in a production project can be extremely fruitful.

Take, for instance, the following hypothetical projects:

- A student-produced commercial television program for teen-agers entitled - "What's In It For Me?" - an approach to do-it-yourself guidance counseling.
- A slide-tape show on "The Day We Ran The School" - giving children an opportunity to perceive the problems of teaching, administering, disciplining, and perhaps feeding the whole student body.
- A dramatization with sets of foreign language plays for all grades K thru 12.
- The production of a science newspaper - complete with interviews (of local scientists) and deadlines.
- A student run profit-making photography studio as a living lesson in economics, and photography.
- An 8mm film production by 7th graders entitled - "Our Town: How It Began."
- A semi-annual classroom TV program - "That Was the Term That Was!"

Unfortunately, there is a Curriculum Cage which inhibits much of this kind of activity. Do we use Math time? Gym time? Perhaps study time.

In any event, in the beginning we can use Club time, extracurricular day or night time, or Saturday morning time.

However, in order to engage in activities, wherein production of a graphic sort takes place, you've got to build a base.

Let us, for a moment, consider the nature of this base. Primarily, it is built out of insight - insight into the scope of the job to be done; insight into the mechanics of getting the job done; and insight into the patterns of change as they affect what you do and how you do it.

Scope - Mechanics - Change

What do we mean by "the scope of the job to be done?" In many, if not all, local situations there is so little activity in school community creation, that you can practically prescribe the dimensions of your dream house. The actual construction of this communications dream house would proceed in exact accordance with your success in selling your ideas to the top administrators.

Perhaps the easiest idea to sell is the concept of offering a production service to teachers; a place where teachers can come to make, or have made, a chart, a slide, a transparency, a single concept 8mm film, a model, an exhibit, a recording whether oral or visual.

As this service is instituted and begins to be utilized, the most apparent benefit will result from their examination which the teacher must make of his or her classroom performance. Am I getting across the lesson objectives? Is the sequence of presentation correct? Does the class participate in a meaningful learning experience? Has the lesson been placed in the context of life's experience - life, that is, as it is understood by the student?

It would seem natural for many teachers in adjusting to the rhythm of the teaching year, to work out a recipe for executing their assignment; and then to perform in a similar fashion, year after year, with only minor variations on the theme.

This opportunity to integrate the products of a graphics communication center into one's recipe for teaching can only serve to improve the good teaching and, in some cases, to salvage the bad.

A previous reference to student participation in production could be inserted at this point. (REPRISE) In addition to the motivational values of this activity, there is much that can be said for these experiences as they relate to the development of living skills, of learning how to work with other people, either as a subordinate, or in the exercise of leadership; of the maturing experience of accepting responsibility; of gaining a perspective to assist in the difficult process of making career decisions; of achieving a relaxed social posture, one based on "real" situations, rather than the "unreal" situation of a school dance or the Friday night football rally.

We could talk about the psychological balm that comes from achievement, from doing a job well, from having something of value with which to identify.

Designing the scope of the job to undertake in a communications center, therefore, involves considering all of these things.

Now, the mechanics. As the person who will serve as the nucleus around which this facility will be constructed, the communications specialist, or AV coordinator, must equip himself with a certain set of tools. Some of these tools we are born with, some we can develop, others we can requisition.

Certainly an active and free-wheeling imagination would be essential. An inclination to invent, to improvise, to adapt, would be important. An ability to grasp and relate the significant core factors in a challenge or an opportunity is necessary. When confronted with an assignment to oversee the creation of a system of materials which will help to teach, the communicator must first learn the lesson, then separate out the long sticks from the short sticks, and then articulate in visual terms the shape of the message.

A knowledge of design, both two dimensional and three dimensional must be acquired. An appreciation of the techniques of drama and stagecraft is very useful. The rhetoric, the pace, and the texture of modern journalism must be thoroughly understood. This includes an ability to recognize, or to produce, well written, interesting, concise copy; this includes being sensitive to visually exciting formats whether contained on a printed page or on a reel of motion picture film; this includes approaching the creation of any piece of work with a sense of context as to what it will appear with, at what time, and to what audience.

Now, to the requisition pad. First off, let's requisition a room. The biggest one you dare request...with an option on the rest of the building to allow for modest expansion. This space is then subdivided according to the services which you elect to offer.

The preparation of art work, whether for flip charts, overhead transparencies, 35mm slides or filmstrips, requires good light and good materials. The choice of drafting table, stool, mechanical drawing instruments, brushes, pens, pads, papers, paints, inks - the choice of all of these should be made solely on how well they perform. This is not the place to economize. The best talent in the art world will be frustated by "bargain" supplies.

In overhead transparency production there are three dominant methods. The first could be called direct mechanical production; i.e., applying ink or grease pencil or tape or opaque cutouts directly to the acetate sheet, A second approach would be the copy method; wherein office copiers and book copiers and lift techniques would be utilized to transpose to transparency from existing opaque printed material. The final and most sophisticated method is that which uses diazo type materials. This material is manufactured with latent colors which are released upon exposure to ammonia vapors. An adjunct of this method is the use of pre-printed translucent masters which are prepared as complete courses by certain publishers.

The ideal Graphics Center would take advantage of each of these methods. A photography arm is the next essential dimension of this Center. The requirements of a darkroom are special and need early planning. A generous and constant supply of hot and cold water is needed. The room itself must be light-tight and should have a light-trapped entrance. A method of ventilating this space must also be installed. The accompanying equipment list gives just an indication of the kinds and costs of material for photography. A finishing room is desirable for drying and mounting prints. If the preparation of exhibits is part of your undertaking, a facility to produce photo-murals would be extremely useful.

Other possible Center activities might encompass film-making or closed circuit television production. Because of the highly specialized nature of the skills required in these areas it would be advisable for the coordinator of this Center to become conversant with film and television techniques.

The final insight - that into the patterns of change as they affect what you do and how you do it is perhaps the most important long range consideration. Because no matter how well conceived, how completely equipped, or how excellently staffed your Center may be, it will begin to go downhill the day you stop scanning the horizons of need, the frontiers of method, and the upper reaches of taste.

LO! THE POOR CHALKBOARD

Herman E. London, Jersey City State College

Every year dozens of new audiovisual techniques and devices appear on the market. Each new gimmick is hailed as "this week's panacea."

Daily, we hear school administrators and professional educators in teacher training institutions bemoan the fact that teachers do not know how to operate such "basic" audiovisual devices as the filmstrip projector, the 16mm motion picture projector and the tape recorder.

Perhaps we are asking our teachers to run before we teach them to walk. Are teachers' colleges training teachers in the proper use of the most basic visual communication device?

What would your reaction be if I were to tell you of a marvelous device that operates without electricity (either AC or batteries), has no bulbs, fuses, no tubes to burn out, requires no threading or operating skill (in the mechanical sense) on the part of the user, and can present large images in both black and white color? Would you be thrilled? Well, I am referring to the forgotten member of the audiovisual family....lo! the poor chalkboard.

I contend that teachers should be trained in the specific techniques of chalkboard utilization, should use boards more effectively in class and should have a greater say in the related aspects of school building renovation and future planning.

A variety of chalkboard installations are available. Even with the standard wall installation, the teacher should be consulted as to suitable height and most appropriate wall. The kernel of my audiovisual philosophy is, "If the pupils can't see it, and can't hear it, they're not going to learn it."

But other possible chalkboard installations should be considered. In Chemistry lecture halls boards slide up and down; in Physics lecture halls boards slide to the sides to permit the equipment to be passed through from the preparations room. Consider also modular chalkboards, roll-up (map type) chalkboards, continuous loop chalk surfaces, and roll-around chalkboard units. Maybe the wall installation is not the only possible approach!

We've all heard of the Blackboard Jungle. Join me now as we pick our way through the chalkboard jumble of possible surfaces. The traditional chalkboard surface material is, of course, slate. However, nowadays boards are available made of glass, plastic, composition, steel (magnetic), steel clad with other material, pressed board, painted pressed board, 12-ply linen, and even black construction paper.

In terms of color, we have many choices in addition to the traditional black (grey) slate. For a while, the fad in green chalkboards held sway. Green boards were supposedly more legible and easier on the eyes of the students. I used to say "Blackboards will be read when they are green," until the advent of boards in so many other hues. The while, plastic, washable chalkboard requires special writing instruments, but standard chalk is suitable for the grayish, blue, yellow, ivory, coral, and tan boards available to match the decor of the classroom.

Lighting is a factor in chalkboard legibility. Even the natural lighting streaming in from the windows at the side of the classroom must be controlled. Do you draw the shades on the window nearest the front of the room to reduce the glare on the board? You should. Incandescent light fixtures overhead or flourescent fixtures above the board can cause glare if the angle of incidence of the light equals the angle of reflection into the students' eyes. Ultra-violet light is of course necessary if one wishes to use the chalks that glow in the dark.

Perhaps we are more accustomed to the soft white chalks. We think in terms of rubbing a chip of limestone from the White Cliffs of Dover on a slab of compressed shale from the quarries of Pennsylvania. Consider also the hard-milled, coated, so called "dustless" type that tends to squeak more. Let's not forget colored chalk. It is not to be held in reserve, as the ultimate weapon, or used only in anger, as my own third grade teacher did when she found that repeated verbal instruction could not convince me that both "there" and "their" began with "the". Heed this word of caution about using colored chalk. Never use the type sold for pastel art work. The oil content in that type will damage your slate board just as irreparably as if a student had written on the surface with a crayon. Luminescent chalk, glowing under the rays of black light, can be very useful in inserting a "quickie" explanation while a slide is still being projected on an adjacent screen.

While I was a child, too young to appreciate that the Board of Education was a group of men, I thought that the board of education was the one on the front wall of the classroom. Accessories can help to make it truly so. Mathematics instructors can and should use the large plactic or wooden devices marketed. Pretractors, compasses, rulers, straight-edges, Metric and English scales, 30-60 and 45-90 triangles can enhance the effectiveness of the lesson.

Dotted-line stencils can enable a teacher to "dust-through" graph lines, and map outlines by using an eraser. Large plastic stencils can save immeasurable time in drawing chemistry apparatus and electronics symbols during a lesson. Music staff-liners, other multiple liners, and chalk-holding devices are used by the true "pro". Magnetic materials can be used in conjunction with chalked diagrams if the board is made of ferromagnetic material.

Chalkboard types of surfaces can be found elsewhere. Roll-up outline maps and black globes are but two such places. Have you thought of painting a chalkboard surface on the floor of the inside playyard for the more meaningful teaching of Geometry? Have you thought of painting a chalkboard surface on a wall of the building near the outside play area for use in the teaching of physical education skill and team formations?

The actual techniques of using the chalkboard properly are not taught by our colleges, I contend. Teachers-to-be are never told to use their inside arms rather than reaching across their own bodies to point to something on the board. They are not told to support the stick of chalk with a forefinger as they write to prevent the chalk from breaking during use. They are not told to hold the stick of chalk at a small angle to the board (as contrasted with the way in which a pencil is held) to prevent nerve-chilling squeaks. They are not shown how to make the dotted lines often necessary in diagrams.

"Starting with a clean slate" is a familiar metaphor but teachers neglect the duty of erasing the board completely at the beginning of the class period and run the risk of distracting their students with unrelated material.

Tomorrow's teachers are never told that they might paint basic lines on a board permanently for repeated use. They are not warned against performing algebraic manipulations with an eraser. (Students rewriting the whole equation in their notebooks fall behind). Student teachers are not told to write as if every class were a sight-conservation class. They are not told that printed letters (manuscript) are more legible than (cursive) writing. They are not reminded that should use the upper half of the chalkboard so that students in the stubs of pencils, serve their purposes when they are wasted.

Next year's teachers are never told that an opaque projector or an overhead projector can be used for the advance preparation of a chalkboard diagram. They should be happy to hear about the class time thus saved and the improved diagrams that result.

Whether you use the felt erasers or the rubber erasers, keep your board clean. When you have your board washed be sure that no soap is used and that the board is dried with a soft cloth afterward! Chemicals should never be used! The intervals between resurfacings will vary according to the intensity of the use of the board, its particular material, and the care it receives. Who should clean the boards daily? The teacher? Well, at one time teachers had, among their other assigned chores, the cutting of wood for the stove in the school room. The pupil? Even though we may wish to indoctrinate the pupils with good housekeeping habits, is this the way to do it? The custodial staff? Will board cleaning mean that other tasks are neglected?

In addition to the problem of who cleans the board, there are many others of philosophy vs. hardware to be reconsidered. Should we have chalkboard surfaces on the many walls of the room or should we limit chalkboard installations to one key wall? Modern school buildings are no longer the series of egg-crate-like rooms they once were. A larger proportion of the rooms are "special" Music, Science, Art, etc. Perhaps no boards at all should be included among the facilities in certain rooms. In an American Literature seminar room, a turnback chart on an easel might be more suitable.

If you find yourself frequently printing the words "DO NOT ERASE" adjacent to other material on your chalkboard, perhaps you are not using the medium correctly. Rather than freezing the chalkboard, prepare your subject matter content on overhead projector transparencies and the material will be available for carry-over lessons and for review weeks later.

Is the chalkboard really a valid device for student use? I think not. The chalkboard is one of the tools of the trade, so to speak, for those in the teaching profession. Our aim is not to train all our little pupils to become future teachers. In his book Culture Against Man, Jules Henry contends that the procedure whereby a pupil is called to the board to calculate an arithmetical problem while the rest of the class looks on impatiently, is one way in which we transmit the success-failure value system of our culture to the children.

Numerous idiomatic and slang expressions permeate our daily speech and reveal how much the chalkboard has influenced our philosophy. We hear of a Chicago rub-out, chalking one up, and the clean slate mentioned above.

If you are seeking the manufacturers and distributors of the various boards, materials and accessories described above, "let your fingers do the walking", and refer to the yellow pages of the classified telephone directory.

By way of conclusion let me reiterate the key points made above.

(1) Maybe we should not take chalkboards for granted but should re-examine our philosophy concerning their installation and utilization.

(2) Maybe other communication techniques are more appropriate for certain teaching learning situations.

(3) Maybe the chalkboard is not a device suitable for pupils' use.

(4) Perhaps our teacher-training institutions should tighten up the course outlines and teach some specific skills such as the proper use of the chalkboard.

(5) Perhaps that old cliche about getting out of something just what you put into it applies to the chalkboard as well.

Many years ago, Hugh A. D'Arcy's poem, The Face Upon The Floor, was a popular recitation. Let's quote from the last two verses.

"Say, boys, if you give me just another whiskey I'll be glad,
And I'll draw right here a picture of the face that drove me mad.
Give me that piece of chalk with which you mark the baseball score
You shall see the lovely Madeline upon the bar-room floor.

Another drink, and with chalk in hand the vagabond began
To sketch a face that well might buy the soul of any man;
Then, as he placed another lock upon the shapely head
With a fearful shriek he leaped and fell across the picture -- dead."

Let us hope that teachers will take a new look at the poor chalkboard, and that the next time we pick up a piece of chalk, we use it more skillfully instead of falling flat on our faces -- dead.

DEVELOPING SERVICES FOR OVERHEAD PROJECTION

Eugene J. Erdos, New York City Branch of Education

In 1958 the Bureau of Audiovisual Instruction and the High School Coordinator of mathematics introduced the overhead projector into the high school system in New York City. Funds used were those provided by the NDEA Title III program. High school mathematics was chosen because most of the teaching continued to be traditional in approach and there had been little done to change these methods. It was decided to requisition one projector for each 5 mathematics teachers in each high school. To support the use of these projectors, a kit of materials containing acetate sheets, marking pencils and mounts were ordered for each school. In addition, a set of 50 transparencies were made at a production center for the teaching of algebra, plane solid geometry and trigonometry. The subject matter for these transparencies was produced by two chairmen of mathematics departments in New York City. The transparencies were produced at a center in color by the Tecnifax process. Many were overlays and represented a beginning, an attempt to stimulate the use of transparencies.

Through the cooperation of the Tecnifax Corporation, supervisors at the Bureau of Audiovisual Instruction took a one day session at Tecnifax in the use of the overhead and the manufacture of diazochrome transparencies. The course was also made available to school supervisors and teachers in the New York City system and more than one hundred teachers attended.

However, the lack of materials still plagued us in 1960 and for that matter still does in many different ways which I shall discuss later. Commercially produced materials began to filter in - our evaluation committees approved transparencies which appeared on lists as a result of work done in 1961 and early 1962. There now are on our current approved lists over 600 items in Mechanical Drawing, Driver Education, General Science, Physics, Elementary Education, Earth Science, etc.

The high schools now average 5 projectors per school (one school has 11, another 20). Junior High Schools have all received at least one by the end of this year. The immensity of implementing the various schools is indicated by the fact that we ordered 500 projectors for the elementary schools alone, during the past year. This hardly scratches the surface, when one feels that there ought to be an overhead projector in each classroom.

Our teacher training program in the use of all audiovisual equipment and materials is our basic problem whether it is in the use of the overhead projector, language laboratory or a sound motion picture film. In spite of the fact that in-service and television courses are given, there is no question that the person-to-person approach that a workshop affords, is the best method of teaching teachers to use audiovisual materials and equipment. Workshops of 5 to 10 people are being given to encourage the use of the overhead projector. Workshops are often given without credit and after school.

In my work with the high schools, I have appeared at innumerable faculty meetings, Cabinet meetings (chairmen's conferences), departmental meetings, experimental meetings, etc. In order to stimulate interest and a desire to achieve a modest amount of skill in the use of the overhead projector. As a result, in my visits to the schools I find that the overhead projector is being used in many different ways, under the guidance of chairmen, who are the teacher-trainers, and with the helpful ingenuity of the teachers themselves.

Some examples: One of our best users, and chairman of the accounting department at Martin Van Buren High School is Mr. Murray Miller who has in the last few years developed enough transparencies to cover the course in accounting. With an associate Mr. Janus, Chairman of Accounting at Canarsie High School, is writing a textbook which will have tracings from which transparencies can be made by users of the book. A mathematics chairman, Dr. Dodes at the Bronx High School of Science, teaches the use of the IBM Computer with the transparencies supplied by IBM. Throughout the system we have had varying degrees of success in the use of the overhead projector in mathematics departments. This, of course, would be true of any new device which is introduced into our schools' system. The library has used the overhead projector rather effectively at Erasmus Hall High School.

Earth Science and Chemistry has been developed at Bay Ridge High School by two interested and active people, Mr. Walter Ross and Miss Joan Leonard. I saw an interesting lesson using some cartoons as a motivation in a business law class and another lesson given to high school dropouts in our special Project III program, on how to write up a sales check. One of the first uses of the overhead projector was in the field of electronics for circuitry at William E. Grady Vocational and Technical High School, where a teacher developed a series of transparencies for his use. At the same school a set was developed for teaching of trade drawing. In all of our 87 high schools it is safe to say that the overhead projector is being used more and more as the teachers learn the techniques of using the projector properly and as they learn to use and make their own materials.

There is no question that the teacher is a highly specialized individual who likes to give his or her teaching a rather special personal touch. As a result we find that teachers like to use equipment that will give them an easy way of making their own materials. Some methods like the Thermofax transparencies give teachers a chance to make transparencies from the daily newspapers, black print material, and pencil sketches. The preparation of rexograph stencils from original typed or drawn copy, makes it easy for teachers to not only have rexographed sheets but transparencies as well. The Tecnifax process will provide diazochrome in color as you all know. But the time needed for this process tends to discourage teachers from making their own. To help these teachers, it is the intention of the Bureau of Audiovisual Instruction to set up a Production Center which will produce transparencies based on sketches and material submitted by teachers.

Other machines for production of transparencies have been submitted but none seem to be as useful as those already mentioned.

To make teachers self-sufficient there has been made available through the usual source of G-1 or supplies list, acetate sheets, pencils, acetate inks, transparencies papers, etc. An entire list of items has been placed on the G-1 list for easy ordering.

To help teachers solve personal problems, articles have been written in our publication, "AV Learning;" a mimeographed bulletin has been made available to teachers, a program on the use of the overhead projector is part of a course on Audiovisual and, of course, we are ready to back up our program with visits to answer questions and show new techniques as they develop.

More than ever, what our experience in introducing a program for the use of overhead projector or any program indicates, is the need for a teacher of Audiovisual Communications who is at the school on a full time basis, ready to aid new teachers and help experienced teachers use the new technology in teaching. In this way, the audiovisualist can lead the way to more effective teaching and quality education.

PHOTOGRAPHY INNOVATIONS IN THE ELEMENTARY SCHOOL

James C. Yoe, Montrose

For many years I have used the camera in my elementary art room to record projects and working situations of various groups. While the pictures taken may have been somewhat amateurish, they served my needs. Later, I became involved with motion picture photography within the school. It was during this experience that the camera seemed to offer possibilities as a tool for Art expression.

A group of sixth grade children in the Elementary Art Club undertook to illustrate a story through painting. These paintings were photographed on a 16mm color film in a manner that would suggest real movement to still objects - an illusion of animation but not animation in its true sense. The characters and the objects in the paintings did not move. The only movements were those of the camera, the picture, and objects placed about the painting. The effect of motion was also produced by zoom lens and use of other lenses. A recording of the narration of the story with sound effects afforded greater sense of motion.

Twenty-five children painted over seventy-five pictures to tell the story. The first attempt in photographing proved unsuccessful because of various camera techniques of which we were unaware. We next tried duplicating each painting on 35mm Kodachrome II transparencies. Each transparency is projected on a rear projection screen and the movie camera picks up the image through the screen. This system affords the camera man much better parallax, more opportunity for suggested motion, because the projected still is much larger and the color is more vivid.

A film was shown wherein simple stories written by fourth graders were animated by use of cut-outs made of black, white and gray paper. The cut-outs were moved before the movie camera and photographed one frame at a time (four frames to each movement).

The project was highly successful with the children. They not only realized another dimension in their art but also became more fully aware and appreciative of the artistry involved in movie and TV cartoons.

The camera in our school has gained much more importance in the past few years. Our Sixth Grade Art Club is now engaged in producing animated films, and also short length live films portraying safety, health, and educational features that pertain to our school. In addition to the movie films, still slides have been made by the sixth graders for classroom use. Some of the slides have been used with rear view screens (in lieu of overhead projectors) for classroom work in situations where the overhead lights could not be turned off.

It was explained that a rear-projection screen can be made by using four canvass stretchers on which 24" X 36" matte surface acetate is stretched.

Slides were shown that were made for the music department on black and white positive 35mm panchromatic film. These slides enabled the instructor to teach large choral groups the meaning and value of special musical arrangements that are not generally found in the books. This illustration is given to illustrate that every teacher can have a larger assortment of visual aids at his fingertips quickly if he makes his own. (A 36 picture strip of 35mm film can be processed in 45 minutes in any dark room using Kodak chemicals that come in a kit. One kit will develop eight 36 frame rolls of film. Bulk 35mm positive film can be purchased).

programed instruction and teaching machines

AUTOMATED TEACHING EQUIPMENT IN LEARNING

Alexander Schure and Sheldon Littwin
New York Institute of Technology

I wish to describe to you a pattern of research resulting from a recent grant awarded the New York Institute of Technology by the Carnegie Corporation of New York. This assistance has supported research on a model system for the training of engineering technicians. One offshoot has been the development of a self-organizing, computer-based educational system by which a computer makes diagnostic examinations of a student's level of knowledge, feeds him the learning materials he requires, checks his progress, and helps him to achieve successful completion of the objectives specified for a particular course.

The individual diagnosis permits a student or participant to enter a learning situation at that point most closely related to his needs and capacity to perform. Having discovered the precise point of a student's level of knowledge in a given subject, the computer selects his appropriate learning resources - the lectures and seminars he should attend, the best texts for him to study, the best books for him at the library, the films for him to see.

In this self-organizing learning method, the computer then sets up a mechanism for checking the learner's progress according to his stipulated objective, whether it be to complete credits for a degree course, satisfy a need for continuing education, update his professional background, or reach a level of technical skill. The student is ready to leave the system without restriction to artificial time limitations, when he has satisfied his objectives.

The self-organizing system permits critical examination of the 'unalterable truths' under which many present educational systems now operate. These include the fixed student-teacher ratio, the assumption that the number of years determines student educational attainment, and the belief that present curriculum patterns meet widely diversified student needs. With the assistance of computers, students in the schools to come will organize their own curriculums.

The self-organizing system stems from a systems analysis approach to education. Systems engineering analysis offers a scientific method to the educator for the organization, statement, and derivation of alternatives in the solutions possible to the many complex problems of education. Its techniques require precise stipulation of objectives, resources, alternatives, and criteria. Proposed modes or methods of organization may then be derived and structured. The selected mode permits the allocation of various choices to be applied to a particular problem. It may also infer new techniques, equipment and facilities better suited to a specific objective.

Systems engineering analysis offers a new orientation with which to approach the many complex problems of education. The main objectives are to permit maximum utilization of faculty skills, improve the learning rate of students, permit each student to realize his capacities at his individual optimum pace, control the content and quality of curriculums, and create greater efficiency in teaching methods. A systems approach may use a combination of media for mass instruction (such as television) along with media for individual instruction (such as programed learning). It requires the integrated application of teaching teams, related technical personnel, machines, and programed or sequenced materials. Since the aim is greater productivity without sacrificing standards of quality, a systems approach involves the use of labor-saving devices such as teaching machines, constituting one factor within a "system", and computers for rapid data acquisition and analysis. The system should be self-improving, based on constant feedback information at all stages.

The computer in the system serves to acquire data and rapidly analyze the student's progress and rate of progress, his difficulties and patterns of difficulty. In conventional classroom situations, patterns of difficulties exhibited by students may not be apparent for weeks or months. By the time the difficulties are uncovered, it may be too late to effect adequate remedial measures. The loss of student time is irrecoverable. Utilizing computer diagnosis, difficulties may be revealed within the course of a single period or at most a few periods, and rapid, effective remedial measures may be undertaken. On the other hand, as patterns of accomplishment are revealed, accelerated measures for advancement may be instituted.

Prior to a fuller explanation of the operation of the self-organizing, computer-based system, an explanation of the philosophy that lay behind its development may be of value.

We know that the teacher today, whatever his level of involvement may be, faces an almost unprecedented challenge. We live today in a world that consists of jets, computers, Voshkods and space exploration. Our conversations and knowledge range from broad cultural themes through atomic fission to the chemistry of life. Our teachers today are faced not only with the problem of transmitting all of this new knowledge, but the awesome responsibility of guaranteeing that the young people in their trust actually understand it all. Further, they must not only equip these young men and women with the ability to use this knowledge, satisfying both individual aspirations and the world's needs, but must also develop in them a state of mind which, through analysis and synthesis, relates pertinent material to everyday use. In our more prosperous, sophisticated, heavily industrialized nations we live under the impact of many kinds of technology and the effects of automation. In the emerging newly developing countries, there is an urgent need to solve the enormous problems that stem from expanding populations, inadequate food supplies and unsuitable public health facilities. Possibly most important of all, the desire for independence, so dominant in these nations, makes imperative educational solutions which will allow total realization of these goals. In both classifications, the educational problems are so complex, and the needs so severe, that we no longer dare to allow the teacher to work alone and unaided.

The devoted dedication that almost all teachers bring to their task is not enough to satisfy the problems which exist today. In the many sectors of human endeavor, the field of education is among the last to which technology has made any truly substantial contribution. There now exists, therefore, in terms of present efforts to modernize the educational structure, an urgency to provide appropriate and adequate technological measures, sufficient to support the resources and dedication offered by the human teacher. Without the application of educational technology, it is difficult to see how the teachers of today, small in number in proportion to our enormous student population, will be able to lead each student to explore, to learn, to evaluate and to master the prodigious quantities of evolving knowledge.

The systems approach to technology, particularly as it relates to educational technology, is not just a collection of hardware - it is much more. It is much more. It is a social activity involving people, ideas, methods, machines, communications and various interacting systems. But always, it comes back to people. Utilization by people is always the prime objective. The effect of interjecting technology into education is to come up with an efficient and rational division of labor between men and machines, subject always to the rational control of the human being. Once we have done this, we have an opportunity to expand the benefits that human personalities bring to the process of education, and through technology to relieve much of the rote work normally associated with the educational process. In no way would we be restricting human values. The responsibility for the design and operation of the system proposed herewith relates both to the professionals who practice in the educational world, and to their students.

In the beginning of this presentation I referred to the development of a self-organizing, computer-based system, the kind of system that tailors an educational program to meet a specific individual need. There are normally two kinds of goals common in educational organization. One arrangement is the typically formal curriculum that exists in our conventional institutions. Thus, for example, when a young man in high school or in college elects a specifically oriented program, one which includes a course in mathematics, he will, at the conclusion of a finite time, take a series of objective examinations. The results, coupled with other evaluations made by the teacher in the classroom, are used to determine his competency in that subject. In both high school and college this kind of formal authoritarian structure is amplified to include a number of required courses leading to either a diploma, a degree, or to some professional objective.

There is another type of educational organization where this structure and responsibility is either less evident or completely absent. In the wide gamut of continuing education, whether the impetus be social or concerned with the upgrading of a technical or a professional skill, the objectives are less formal. Such goals if stated at all, are usually less precise than in the formal educational system, and most often are evolved by the learner in the system. Thus, a practicing physician who wishes to stay abreast of the field may say: "I must have certain knowledge relating to a new kind of drug". He has now formulated his objective and proceeds to organize his own method, entering the educational system to do a number of things to satisfy the need he has expressed. For example, singly or in combinations, he may attend a seminar being given by a professional group, or use the resources of the best available libraries, or ask his colleagues about the persons or groups having the most knowledge relative to his problem, visiting these people in order to get the specific information he desires. The moment he has satisfied his defined objective he says: "I may now leave the educational system for the moment, having completed this particular task".

Education is not really a series of separate little compartments of knowledge. Over the last decade this belief has been shaken, steadily and progressively, throughout school and college organizations founded upon recurring quarter, semester, or annual intervals. The concepts of advanced collegiate placement, non-graded classes, dual-progress schools, and multitrack programs are evidences of an increasing orientation towards non-routinized pupil time organization.

It is only when full range is given to the flexibility of schedule inherent in a fully adaptive and differentially paced teaching mode that the capability of the mode to react to various pupil differences - or to situational exigencies- becomes primarily related to one single factor - time. This is the truly revolutionary quality of an adaptive teaching mode, replacing the rigidity - native to outworn patterns of scheduled, routinized learning - by a flexible, learner-time based system.

The hypothesis put forth in organizing the computer-based system is that it is perfectly possible to design a system, aided by the computer, where, with great precision, the satisfaction of defined objectives can be met. Here the computer can guide not only the student, but in addition all those concerned with the student, including, among others, the teacher, the professional guidance counselor and the psychologist. The system declares precisely and exactly what it is that the student is accomplishing, and the learning experiences that he should undertake to complete the particular educational task he has in mind.

The description which follows stems from the experimental operation of such a system, and its application, at the New York Institute of Technology. It relates to courses now being given in college physics and will give you an understanding of how the system works in practice. The teams responsible for evolving the "software" - or programs - structure their materials in accordance with specific goals defined by responsible faculty members in the Physics Department.

These objectives are normally specified as heuristic in nature. In effect, they tell the learner embarking on a freshman course in the theory of physics that he is expected to be able to solve a number of mathematical and conceptual problems relating to physics, and that once he has demonstrated his capacity to do so, he has completed the course for formal credit. The student's progress through the course is purely individual, completion ranging from one week to sixteen weeks. (In practice, the most rapid progress for a student without prior background is six weeks.) A series of diagnostic examinations is organized to test the knowledge of each student who enters the system. He takes this series of examinations on special apparatus which automatically translates the information in a form that may be fed into the computer (a 1620 IBM). The computer makes a series of analyses including the structuring of a pupil profile pattern, and integrates these tests with prior indices of performance, such as I.Q., reading level, and mathematical capacity of the student. It then projects, in terms of such measures, the areas in physics in which the student has achieved competence, the segments in which further learning is required because of demonstrated deficiencies, and the specific institutional resources available to the student to help meet the objectives for that unit.

As an example, if the student were concerned with learning something as simple as the fundamental units relating to measurements, the computer would produce a routine record outlining all of the resource material available to the student to supplement the demonstrated areas of deficiency relating to the use of such measurement units. This record would include additional study programs, references to textual material in the library, available films or video tape recordings, pertinent seminars or lecture classes offered by professors in the department, the times these are available, all as they relate to his learning objective, along with final diagnostic post tests to verify the student's progress. A student, in accordance with his attitudes, capacities and desires, chooses from among these resources and organizes his own schedule of learning. The computer may indicate suggestions derived from the attitudes of the student, but the responsibility for organizing his educational program remains with the learner. He may choose from among the available resources those which are sufficient to bring him to the next point stipulated in the objectives defined for the course. I stress that he may select any resource he chooses, including the human resources available in the faculty, to the extent he desires, as available within the institution. Whenever he meets the final "terminal" objectives put forth for the particular course, he has completed that course. He then "leaves" the learning system, in the sense of having no further needs relating to this course.

The mechanism for meaningful independent study thus allows a more complete utilization of the human resources of both the student and his educational institution. Experimental work to date has indicated a major reduction in the time necessary to complete typical courses in degree curriculums. The computer-orianted program may make possible individual education on a mass basis, within or outside universities and other formal educational institutions.

COMMERCIAL GUIDANCE WITH PROGRAMED MATERIALS

Richard J. Jarvis, Nanuet

At the last count there were some eighty commercial organizations involved with programed materials and programed instruction. I have been called upon, as a school administrator, to say a few words about commercial guidance and its relationship to programed materials.

Probably my role is to motivate and charge a few questions so that the panel may develop interaction on the various topics. So let me pose a few questions.

1. How does a school administrator work with commercial companies?

2. What should be the relationship between the two?

3. What are the responsibilities of both parties?

Before I attempt to answer these questions, I would like to give you a little background of our experience at Nanuet. We have been experimenting, for about two years, with programed materials. We have learned of the potential value of programed materials and, probably more important, some of the problems faced by a school system, specifically a high school, in their use. We have tried several commercial programs in our curriculum, on a limited basis. The problems encountered center around those tasks of educational administration, namely, developing a philosophy, adopting a curriculum, functions of the teachers in this process of programed instruction, scheduling, the position of the teacher as it relates to the learning process and the teaching process, classroom management - and I could add several more, but I won't at this point.

Now, to identify a few problems that school officials may face when commercial companies knock on their doors and attempt to get not one, but both feet in. The first problem or category is "How do educational administrators react to what I would like to call advertising?" The connotation of the word "advertising" could relate to "hard sell," "cold turkey," "canned pitch," "salesmen's jargon," and all of those skills that make salesmen successful. Probably a better way to identify this would be to read a few examples of some of the commercial advertising found in journals and advertising literature that have come across my desk:

Excerpt #1 "Now a remarkable new programed course immediately gives you all the words you need to build a forceful and vigorous vocabulary.....words you can use to sharpen and polish your speaking skills - with a minimum of effort. Because instead of books, pamphlets or records, the VOCABULARY BUILDING COURSE consists of three teaching machines that teach you more in a week than other methods do in a year."

Excerpt #2 "Teachers in every area of the United States have said those students using our programs find classroom hours more in-computer (a 1620 IBM). The computer makes a series of analyses including the structuring of a pupil profile pattern, and integrates these tests with prior indices of performance, such as I.Q., reading level, and mathematical capacity of the student. It then projects, in terms of such measures, the areas in physics in which the student has achieved competence, the segments in which further learning is required because of demonstrated deficiencies, and the specific institutional resources available to the student to help meet the objectives for that unit.

As an example, if the student were concerned with learning something as simple as the fundamental units relating to measurements, the computer would produce a routine record outlining all of the resource material available to the student to supplement the demonstrated areas of deficiency relating to the use of such measurement units. This record would include additional study programs, references to textual material in the library, available films or video tape recordings, pertinent seminars or lecture classes offered by professors in the department, the times these are available, all as they relate to his learning objective, along with final diagnostic post tests to verify the student's progress. A student, in accordance with his attitudes, capacities and desires, chooses from among these resources and organizes his own schedule of learning. The computer may indicate suggestions derived from the attitudes of the student, but the responsibility for organizing his educational program remains with the learner. He may choose from among the available resources those which are sufficient to bring him to the next point stipulated in the objectives defined for the course. I stress that he may select any resource he chooses, including the human resources available in the faculty, to the extent he desires, as available within the institution. Whenever he meets the final "terminal" objectives put forth for the particular course, he has completed that course. He then "leaves" the learning system, in the sense of having no further needs relating to this course.

The mechanism for meaningful independent study thus allows a more complete utilization of the human resources of both the student and his educational institution. Experimental work to date has indicated a major reduction in the time necessary to complete typical courses in degree curriculums. The computer-oriented program may make possible individual education on a mass basis, within or outside universities and other formal educational institutions.

teresting, appear to work harder, definitely learn more and seem to have better retention than with conventional texts."

Excerpt #3 "Even with small increments of knowledge, active participation, and immediate reinforcement, a student still might not achieve his maximum potential unless he could proceed at his own rate. Programed materials make this possible. The slow learner has as much chance to learn as the fast student; it may just take him a little longer. In putting an end to the lock-step process that has plagued the traditional classroom, programed materials free the teacher for individualized instruction whenever it is needed, and for an enrichment of the entire curriculum."

The publisher's programs have undergone extensive testing since they were first conceived in the fall of 1959. They have proven that they strengthen understanding and improve the retention of subject matter when they are used by competent teachers."

Excerpt #4 "Announcing a fabulous new program that opens up the world of reading to your entire family!"

"Educators - An invaluable tool for teachers"

"Thoroughly tested in schools, the AUTOMATED SPEED READING COURSE is a tool that enables teachers to give immediate corrective help to problem readers. Because it is ideal for home use, the Course saves hours of valuable classroom time. And teachers who take the Course themselves find that it gives them more time for professional reading and study."

Excerpt #5
(acceptable) "Although the development of programed instruction has been based on sound research and practical experience, we recognize that there are many important questions that have not yet been answered, and doubtless some that remain to be asked. We need to know much more about the human learning process and its implications for programed instruction."

"We believe much remains to be learned about how a program can best be used in a course."

The above excerpts of advertising would seem to cure all the ills of instruction for the school administrator if such materials as these were adopted and put into the curriculum. It is obvious that they do not cure all ills. What should be the guidance role here in working with such materials or sales people? Probably the first thing to do is to look at the two parties concerned.

(1) The school principal's role is to improve instruction and to bring about conditions conducive to improvement, either in the learning process or the teaching process.

(2) On the other hand, the commercial organization's purpose is to show a profit, to make enough money for the salesman to draw his commission, to see sales graphs increase from month to month or year to year.

Someone once said that the publishing business is a low volume, low profit, and high risk enterprise. I am not sure of this, but I do know that all publishers are in the business for the dollar, and rightfully so, if one understands this role. When an individual understands this role, and probably to understand it one has to be "burned," or at least have a negative experience, he is in a better position to work objectively with commercial orgainzations. If an individual has had this experience, he develops a sensitivity to the need to be increasingly critical of all programed materials and teaching machines. He should be critical, not because of a "slick" salesman, but because adoption has a terrific impact on a school organization. This impact I am referring to would range from the area of expendable programs to textbook expenditures, to changing the physical climate of the building by design, or to changing of the psychological climate of the teaching process. Before adoption, one must ask the question, "Are we ready for these changes and do we have the financial base for these changes?"

I think what I am proposing here is that schools need help in merging new concepts of instruction, programed instruction being one of them. The commercial organization is in a great resource position to give this aid. The image of all but one of those advertising excerpts that I have related above must be erased so that "backwoods" schools and "quaint" administrators can feel at ease in working with commercial organizations. There should be no questions or poor relationships if we understand that profit is the role of one and instruction the role of the other. The commercial organization has the responsibility for more than just the delivery of 50 programed texts to the school system and writing the account off as "paid."

I have made some comments criticizing poor relationships between commercial orgainzations and schools, but let me tell of one positive relationship I had with a commercial organization. I was not sure if this company's initiative was to get test data from a public high school because their program had been tested on other levels but not with high school students, or if it was the policy of the company. Nevertheless, I would like to comment on a positive relationship that school officials can have with commercial organizations.

1. The representative had a command of and an understanding for educational problems.

2. He met with school officials and those teachers concerned, in group process, for at least two or three sessions. He introduced consultants in the field; he helped set up the pilot program. There was involvement of this representative and consultant with parent orientation meetings.

3. The company called frequently to check on how things were

moving in the local school and to promote service as the first position of the company. The company introduced supplementary materials; in some cases these materials were from competitive companies.

The description of this relationship, in essence, would indicate a positive, wholesome, and even more improtant, concern of involvement by the commercial organization and the local school. This shows service at the highest possible level.

I would like to take this one step further and say that publishing companies can probably do more than that which I have described. As I mentioned before, they are considered to be low volume, low profit, and high risk enterprises. Would it not be a good idea for the commercial organizations to take some of their low profits and organize staffs which depict a consulting service approach rather than a "slick" salesman approach with programed materials? By doing this, the commercial organizations would be developing an image that would encourage good relationships between the schools and the commercial organizations.

These representatives, or staff members, I am referring to must be able to speak educational jargon but, more improtant, must be able to understand the school's problems in launching new horizons of innovation. In the area of programed instruction I would propose that a commercial organization's best selling point be that of service to the local school. In a competitive market, service is the one sales criteria that pays dividends.

At this time I would like to identify a few specific items that I look for in commercial companies or programs:

1. What is the philosophy of the commercial organization with programed instruction?

2. Does the company create an image that their product is the panacea to cure all the ills of public school instruction?

   Is the philosophy based on good educational technique, or is it based strictly on a salesman's approach to selling a product?

3. It is interesting to note who makes up the advisory board for the publisher of programed instruction, What are their names? Who are the educators who are behind the publisher in programed instruction?

When you ask the following questions, it is interesting to think about the caliber of the educators and if there is an advisory board:

1. What about editorial assistance to the programer? Does the company buy programs carte blanche or does it aid the programer with editorial assistance to assure a good program? This point is interesting because if they do provide editorial assistance it would indicate to me that the moral fiber of the organization is such that they do want to produce good programs.

2. **What about field testing? Does the company readily have copies of their field testing available to give to the school for evaluation? A specific field test should relate to a local situation with programed instruction. What are the items to look for in a specific field test?**

    a. **The objectives of the program. What is the program attempting to do?**

    b. **What type of testing instruments were used?**

    c. **What was the profile of the students tested? Does it relate to our local school?**

    d. **What were the conditions of the field test?**

3. **Does the programed material have a handbook for teachers? The handbook for teachers in the use of programed instruction can be a valuable aid for technique and method. It can give teachers the sense of security that sometimes is needed.**

4. **Does the commercial organization have a consulting service or just a sales organization to sell in volume?**

The items suggested above can give one a good background of the organizational structure of the commercial enterprise. It can also identify points of view and philosopy in selling programs.

There are many more questions I would like to raise at this time, primarily to bring about interaction for the panel discussion later. Some of these questions are:

1. **What about the cost of programed materials as compared with traditional textbooks? How are commercial orgainzations attempting to bring the cost of these materials into line with traditional textbooks?**

2. **What about expendable materials of programed instruction? (the hard cover versus the soft cover approach, again relating to cost factors).**

3. **What about programs that do not do the job that they have been expected to do? How does the local administrator explain this point to local taxpayers in relationship to textbook budgets?**

4. **What about the scope and sequence of programed materials to curriculum? For instance, if a local school has introduced modern math into the curriculum, are programed materials updated, with curriculum revision?**

5. **What about commercial guidance in writing programs? Is there, and should there be responsibility on the commercial organization's part?**

6. **Programed instruction, if it does nothing else, is making teachers increasingly sensitive to the different ways in which children learn, and the importance of providing for these individual differences. On this point, should commercial organizations share in the responsibility of getting these facts within a school system, or is it the prime responsibility, in terms of cost, of the local school district?**

MASS MEDIA AND PROGRAMED INSTRUCTION

Phil C. Lange, Teachers College, Columbia University

This title should intrigue those matchmakers who anticipate unlikely but not impossible marriages. Programed materials are typically characterized as "individually paced" -- giving the individual learner control as to how fast and when he will move through a program or sequence of learning activities. The program has been tailored to a special kind of individual. But mass media are paced by the sender, not the receiver, and they transmit messages typically aimed at a broad norm for a large audience. Two very different patterns: one stresses a sequence of individual interaction; the other stresses the means for communicating concurrently to a mass of learners collectively or individually. Can they live together? Of course they can, if they respect their unique differences!

"Mass media" has a dual connotation. One connotation is that the media -- the materials of instruction, the content and the form -- is mass produced; in this sense, newspapers and phonograph records and the products of printing presses and mimeograph machines can be mass media even though the mass-produced product does not reach its audience at a simultaneous moment. The other connotation highlights the mediating agent which amplifies or transmits a message to a mass audience at a simultaneous moment; in this sense, the megaphone or loud speaker, radio, movies, and TV are media for mass audiences.

But note that neither of these meanings for mass media justifies either the waste or misdirection that is often associated with our popular use of mass media. For example, a man who wants two pages of sports news gets thirty pages of waste paper added; or sixty pages of Sunday newspaper are brought into the home so that a child can have four pages of comics. Or, the sound that is brought into the home by one family member's interest in a radio or TV program is imposed wastefully and annoyingly on uninterested persons. Thus it is NOT a characteristic of mass media that the system (a) must be wasteful like a scattergun, or (b) must throw messages like a net over hugh "captured audiences" on the slim chance that a few will respond to the communication stimuli.

In short, the mass media could be the means for teaching learners with learning tasks appropriate to the individual, both in terms of readiness and in terms of pacing. But this will require much better diagnosis than we now practice in determining the readiness and performance abilities of students, and in estimating and adjusting instruction to the learning styles and patterns of students. In fact, we already have research by Carpenter and Greenhill at Pennsylvania State University, and by others elsewhere, to show that radio, film, or TV can be used successfully to present programed material to individuals in a "mass audience" -- if the learners have been selected to have the requisite "entering behaviors" and to be like-minded with the type student for whom the program was developed.

It is too soon to make predictions about evolutionary developments that will necessarily result from the matching of the "mass" idea in mass media with the emphasis on researching and designing individual learning as stressed in programed instruction. Certainly we shall have new technologies, new devices, new needs. Undoubtedly, also, we will have to keep in mind what is feasible, what we can afford in instruction. A major economy is usually found in replication of instruction; in one form, it is seen as teaching the same thing at the same time to two or more learners. In another form, it appears as ready-made instruction (pre-packaged lessons or "stored stimuli") to be used repeatedly for appropriate students as they come along. Thus we have the persisting issue of whether the learner is moved to the message or the message to the learner, and we have new devices -- like the computer and electronic data processing systems -- for storing and giving random access to a vast information bank. We can expect new definitions for mass media, and changes in the media thenselves.

I see the "population explosion" and the "explosion of new knowledge" as being related to the likelihood that programed instruction will be exploited successfully by mass media. The mushrooming of "new knowledge" has made it evident that no one person can encompass everything in his own selecting and sorting; and thus we have a reappraisal for basic structures, concepts, natural sequences and relationships. We stress searching techniques more than memory; interaction more than passive reception. The "population explosion" has made it very evident that we have more people "different" in the same pattern; and thus it becomes reasonable (and profitable or efficient) to mass produce for the respective differences. This is somewhat like saying, if there are enough people with different sized feet who need shoes and will secure then, and if someone "standardizes" the different sizes or lasts for shoes to fit respectively the different sized feet, it becomes much more practical to mass produce shoes than to create anew for each foot. Central to such a "shoe technology" is the orderliness and standardization, and especially the ability of the shoe-man (or the finicky customer) to see that the right-sized shoe is a proper fit.

If programed instruction is to be transmitted via mass media it poses this central question: Does the program, so carefully fitted to the type learner with whom it was empirically developed, fit the learner to whom it is now being broadcast or disseminated? If the answer is yes, then the biggest hurdle is overcome. The problem of pacing still remains; but this problem can be subjected to research, using student-response monitors both to invite individual overt interaction with the program and also to give feedback data as to whether in general the presentation is moving at about the right speed, or too slow or too fast.

What I am implying is that in the future we should expect to have some programed materials presented via mass media; and we can expect new ways of analyzing a student's readiness for such instruction, and new ways of pacing the individual to norms that are not his own but appropriate to him. Obviously much of programed instruction will be presented differently. Moreover, it seems inevitable that much of what we now call mass media which is so completely controlled and paced by a central sending station will be re-packaged for individualized self-management and control by the learner or his teacher-adviser. The sharp instructional targets and the feed-back system or programed instruction CAN BE combined with the potential economy of communication in mass media. In a few years I expect this to be a reality.

PROGRAMING COMMUNICATIONS MEDIA FOR LARGE GROUP INSTRUCTION

John F. Romano, Plainview

In 1950 the school population of Plainview consisted of about 150 students. The school district was made up of a single building, while the Plainview community consisted of about 2,000 people.

Today, in 1964 the population consists of about 33,000 people. Eleven thousand students are serviced by nine elementary schools, two junior high schools, one senior high school; a second senior high school is now out to bid.

Population explosion in Plainview has been repeated many times over through fast growing suburbs throughout every state in the country. With this explosion a dual continuing problem exists in today's schools:

1. Increased Class Size
2. Dilution of Teacher Effectiveness

The length of the average teacher's day is about seven hours, excluding the time spent in extracurricular activities such as club sponsorships, etc. Out of these seven hours, about five hours are devoted to teaching class group situations. About one hour a day is consumed by the preparation for these classes. And, it is the rare teacher that averages at least one-half hour a day working completely with the individual student. For the most part, this phase of individual instruction is performed by specialists. One can readily see that the majority of the average teacher's day, therefore, is spent in group situations.

As these groups increase in size due to growth of student population the teacher must divide his attention into many more parts; consequently, his teaching effectiveness becomes diluted.

In an attempt to provide solutions to this dual problem we referred to previously new patterns of school organization, school designs and methods of presentation for these larger group situations are developing.

One pattern of school organization that has hit the educational scene with tremendous impact is the Team Teaching Approach. Much of the professional interest has been stimulated by the Committee on Staff Utilization and the Fund for the Advancement of Education.

In this kind of situation the teacher becomes more effective because in many cases new ideas and methods of presentation spring out through interaction among fellow teaching members.

By way of illustration teachers in the Howard B. Mattlin Junior High School have been structured into vertical subject matter teams in the four academic areas of Mathematics, Social Studies, and Science. These teams are further broken down into subteams of each grade level. Consequently, a seventh grade science teacher plans together with other seventh grade science teachers. They determine the curriculum for the entire student body of seventh grade science students.

Large group or small group presentations are planned, which help to cope with the phase of the dual problem dealing with increasing class group sizes.

Dr. Judson Shaplin suggests, "In some cases the fact that teaching teams encourages the use of large group instruction seems to be the main reason for having the team."[1]

With this new pattern of school organization schools are becoming increasingly involved with the use of communication media and equipment. Many school team teaching projects report an increased use of audiovisual equipment as evidenced by the Norwalk Plan that reports, "Significant increases occur in the uses of the overhead projectors, tape recorders, controlled readers and open circuit television; and heavy uses have been made by the team teachers of the resources of the systems curriculum materials center."[2]

One can readily see the involvement that team teaching has with audiovisual materials and equipment. In order to meet the needs of large group presentations a program must exist that would coordinate the approach and the implementation of this approach.

Programing communications media for large group presentation require the combined efforts of several types of specialists. These specialists form a Communications Team of their own. Members of this team consists of the Subject Matter Controller, Communications Programer and Technical Personnel.

The Subject Matter Controller - may consist of teacher, curriculum specialist, teaching team members, whose function is to determine what subject matter is to be presented

The Communications Programer - has knowledge of programing techniques and communications media to determine how subject matter is to be presented.

The Technical Personnel - prepare the actual material to be presented. Includes graphic artists, photographers, technicians, printers, etc.

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[1] Shaplin, Judson T., "Team Teaching," Harper and Row, 1964, p. 13.

[2] Perkins, Bryce, et al, "Teamwork Produces Audiovisual Techniques," Grade Teacher, Vol. LXXXVIII, June, 1960.

The following indicate some of the steps that are used for programing communications media for large group instruction:

1. Subject matter controller identified:
    (a) subject matter to be covered
    (b) audience through criteria of ability and achievement, and
    (c) evaluation procedures.

2. Subject Matter Controller and Presenter meet with Communications to relay identifications.

3. Communications Programer determines, through research facilities, communication media to be programed into presentation.

4. Communications Programer finalizes with Subject Matter Controller media to be programed.

5. Communications Programer meets with Technical Personnel to produce materials, and arrange for equipment.

6. Communications Programer briefs Subject Matter Presenter with entire programed presentation.

7. Subject Matter Controller, Presenter and Communications Programer meet to study evaluation procedures.

The preceding suggests that a more premeditated and widespread use of equipment and materials will result, providing there are the proper facilities available.

Again by way of illustration I would like to refer to the Howard B. Mattlin Junior High School Plant as a building which attempts to provide the means for these facilities. The following are included:

1. Team centers
2. Overall physical plant
3. Seminar rooms
4. Flexible classrooms-resource areas
5. Local production facilities, duplication, AV equipment, storage and scheduling
6. Large group instruction area:
    (a) Movable wall facility
    (b) Rear projection facility-automated equipment-16mm., two 2X2 slide with FS adapters
        -screens-three 9x12 movable for Multimedia Simulation
        -teaching stations-three remote consoles
    (c) Student response system--to be designed (read out system to evaluate large group presentations)
        -individual response system to program lessons

7. Production facilities - graphic facilities
   - darkroom facilities (4X5 and 35mm.)
   - duplication facilities - dittos, mimeos, and transparencies
   - broadcase facilities - taping and recording equipment

There are three methods of presentation that have evolved concerning the presentation of communication media for large group instruction. These are:

1. The extensive use of one type of medium;
2. The integration of a variety of communication media, and
3. The combining of integrated and inter-related communication media with timed automated audiovisual equipment.

The first method involves the use of a specific type of medium in order to meet all the requirements of the presentation. In this situation, for instance, the transparency may be used to introduce, recall, re-inforce and culminate within the same presentation. There are variations in the use as in the case of the transparency such as partial disclosures, slides, hinges, and windows. But the medium remains the same.

This method is most usually employed in situations where teachers are encouraged to make their own materials. Teachers become proficient in making one type of medium and because of convenience or technical inadequacies use this method almost exclusively. Although the material is made by the amateur it has something which the producers of professionally made materials find too costly to include; the amateur materials are made for a specific teacher-designed lesson. Here the medium is made to fit the teacher's lesson.

In the case of the professionally prepared material the teacher usually must gear her lesson to fit the material. The ideal situation, of course, is to produce professionally prepared material for each individual teaching situation.

The second method of presentation involves the use of an integration of a variety of communications media to be presented in a group presentation. For example, a program may consist of a set of films, matching filmstrips, tapes, student texts, manuals, etc. This method of presentation is finding wide acceptance among producers of instructional materials today. This is evidenced by the fact that more and more manufacturers are becoming more diversified in the kinds of materials they produce. For the most part, excepting for the printed matter, these integrated packages are not used simultaneously. Their main purpose seems to be to re-inforce learning by repitition.

Let us assume that you have followed those procedural steps which have been herewith outlined. After experiencing a variety of large group presentations you will eventually discover that there is an element missing from your presentation. This is the element of TIMING.

You may have the best and most professionally integrated materials approved and used the best programers and subject matter controllers but, unless your presentation takes place at the moment of learning, some of it is lost.

In order to introduce this element of timing into your presentations, automated audiovisual equipment is required. You may recall that Dr. Hubbard made reference to this type of automated equipment during his convention presentation last year concerning the Systems Approach to Teaching. At that time, he referred to the Multimedia Laboratory installation at the University of Wisconsin.

We at Plainview have designed with TelePro Industries a similar installation of automated equipment to be installed in the Howard B. Mattlin Junior High School within the next few months. It is with a great deal of anticipation that we face the challenge of programing communication media for this installation.

TEACHER TRAINING EXPERIENCES WITH PROGRAMED INSTRUCTION

George Fernandez, New Paltz (BOCES)

Introduction

After reflecting upon the original topic which was assigned me (Teacher Training for Programing Materials), I felt compelled to alter the title with the presentation of this paper for fear that the work which we have been doing might reflect an emphasis by us in the area of "preparing teachers to write programs." This has not been our real concern to date. Our work and our interests, however, have been geared to providing a representative number of teachers from the central schools which our Board serves in a variety of selected teacher training experiences which may be described as both formal and informal.

The Role of the Curriculum Center

I firmly believe that any staff member of a BOCES program who, cooperatively with the schools, is attempting to develop an attitude towards some new curricular innovation through inservice experiences is quite often confronted with at least two immediate considerations which will reflect upon any project's success. The first is the necessary, and very desirable administrative review and inquiry on the reasons behind a particular set of teacher training experiences for its staff, or segments of its staff. The second consideration is the degree of respect and confidence that teachers may have towards the work and investigations conducted by BOCES personnel which have taken place in their schools in the past. The work of our Curriculum Center has received the administrative clearance to continue the explorations with them which quite often are prompted through informal inquiries and personal conversations by teachers with both their administrators, as well as our own staff members. At no time has there been any encouragement of across the board inservice training experiences mandated by the schools under our Center's program of inservice activities.

The role of the Cooperative Board in the area of curricular innovation may be considered one of initiating inquiry and investigation into those educational practices and technologies which seem promising and potentially valuable. At present, and in the immediate past the Curriculum Center has felt that the new technology of programed instruction is promising, and will become more and more a valuable media of teaching both the individual and the group.

A Local Definition of Inservice Experiences

Within our county, and in relation to the work of the Center, an operational definition of "inservice training" may be thought of as follows: That series of experiences (formal or informal) provided periodically for a selected group of teachers who have indicated a willingness to work with the Center in pursuing the study of a particular subject, engaging themselves and their students in a trial use and experience with new materials and methods, and analyzing as much of the observable behavior as possible within the limits of their time and competencies.

The key words in the above definition are that these experiences are provided with the teacher's interest and willingness. The administrator's role has been crucial. They have, in substance;

A) released time for teacher workshops at the Center;
B) purchased materials for "trial and usage" experiences;
C) expedited special arrangements when researchers and consultants visited their schools to discuss progress, etc.. Also, clerical assistance;
D) paid travel expenses for their teachers to visit school systems that are working on similar problems; and
E) spent time in analyzing and discussing the new methodology being suggested, or the use of the new materials being tried or tested.

It is not necessary for me to develop the point for this experienced group that when there exists an "air of indifference," or possibly a strong "noncommittal attitude" by the administration towards a new innovation or new idea in education, that potentially interested members of the staff are quite often "undecided," still "reading about developments," and waiting for "results." Frequently, however, the most dramatic results reported do not really make one degree of difference to their immediate method of instruction. It is with cautious pride that I have sensed an increase in the administrative attitudes of our central schools to involve themselves in small scale experimentation, investigate the use of new procedures and materials, and share with each other their experiences and results.

Teacher Training Experiences

Since 1961 the Center has been working with teachers in studying and investigating what the new media called "programed instruction" may have to offer. During the school years from September 1961 to June 1963, the following kinds of teacher training activities took place:

A) Direct involvement with our students in a retention study conducted by the Center for Programed Instruction. All central schools were represented in this work.
B) Participation in a research study dealing with overt and covert modes of response.
C) The Curriculum Center conducted various teacher workshops which were for general information on the subject of programed instruction (Theories - display of actual programed materials - reports of research and work being done by other schools, teaching machines, etc.).
D) We cooperated with the Grolier Publishing Company in the field testing of the improved design upon the Min Max I machine, the new machine being the Min Max II.
E) A teacher training project was set up for the year starting in October 1962 to June 1963 with training sessions held once a month at the Curriculum Center. The attached description is a brief breakdown of this training project which was conducted for the schools with their financial support of approximately $1,000. The consultants, programers and researchers were obtained from the CPI staff, and the training sessions were planned and developed with the assistance and direction of Dr. Lincoln Hanson. He conducted certain sessions, and coordinated the efforts of the CPI staff personnel during these training sessions. The prime purpose behind this project was

to prepare a small core of trained teachers within our county to competently understand, use, and evaluate this new tool of instruction and learning.

1963-1964 Working with the Materials - Teacher Experiences

During this past year 20 teachers representing five out of the six central schools served by our Center worked with programed materials in a variety of ways. Eight of the twenty teachers were involved in our original training group. I might add that most of the teachers who were involved in our training program have been considered, although not officially designated, as good resource people on the subject of programed instruction in general, and quite often a specific source of information dealing with their own grade level subjects.

During the 1963-1964 school year, there were approximately 500 students from grades 4 through 12 representing the five districts of Ellenville, Highland, Onteora, Rondout Valley and Wallkill Central Schools. A survey of the programs used and some simple arithmetic would reveal some of the following information:

A) There was a total of 32 programs used.
B) A ratio of about 4 to 1 was clearly evidenced as it related to the programs which were used by average and above average students as compared to the below average students. This seems to reaffirm other reports of not enough useful and effective materials for the "slower student."
C) 60% of the 500 students fell in the average or above average category based on teacher evaluations and I.Q. records. 40% of the students were in the low and low average category as indicated by teacher ratings.
D) About ¼ (7) of the programs were used under strict field test conditions with very little teacher interaction allowed with the program and the students. The rest of the programs (22) were worked with under a "trial usage" experience.
E) Over 60% of the programs were used for enrichment, while the remaining programs were used for remedial purposes of regular instruction.
F) The minimum number of hours per program ranged from 1 to 2 hours up to 160 hours. However, most of the programs took less than 20 hours to complete with half of them under 10 hours.
G) When teachers were asked to report on the effectiveness of their experiences, their reaction for each of the programs were distributed as follows:

3-Extremely Effective	3-Completely Ineffective
10-Very Effective	7-Not Too Effective
7-Adequate	

One teacher reacted Ineffective, Not Effective and Very Effective with the same program based on a grouping situation.

H) The teachers' experiences also showed that about 30% of the students did not generally enjoy their experiences using programed materials. With no real suprise to us, this percentage of students included the spectrum of abilities from low to above average.

I) Over 70% of the teachers' reactions to each individual program indicated that they would like to use the program again, but quite often with a different strategy than originally used.

J) About 94% of the reactions indicated that they thought the "format" and "style" of the program was "generally good." For what this observation is worth, only one teacher felt compelled to rate her particular program as "excellent."

K) Just about every teacher felt that programed instruction could become a valuable media to support their instruction.. One teacher, however, reported that she is still undecided.

What Have We Learned?

Looking at the word "train," Webster's Collegiate Dictionary also refers you to the word "teach" which is partially defined by the basic sense of "to show" or "to demonstrate." Although many of our teacher training experiences may be informal, they nevertheless are structured so that teachers may personally "see" and "demonstrate" to themselves the merits, or disadvantages of one particular approach to instruction over another.

Some of our feelings to date based on our involvements and experiences may include the following observations and convictions:

A) The high and almost absurd expectations of what programed materials can actually do has been leveled.

B) I believe that a very respectable number of our teachers can competently "break," for their own communities and parents, the large and hazy bubble which the popular press has released with such sparkling claims of "instant success," or "guaranteed education", etc..

C) We have had our share of misusing programs. We have given these programs to students who were simply not ready for the material which was indicated by the nature of their abilities and lack of prerequisite skills necessary to enter into the program. The lack of reading skills is the most frequent reason given for difficulties with the slower student. I feel at times that the damage caused my misuse of the program is obviously more devastating to the student's attitude towards program and content than no use of the program at all.

D) Programs have acted as an excellent "teacher training" device for us. Some teachers have read through a program, and have successfully taught a sequence of instruction based on the program's approach. Their comments have usually included a testimony that they were positive that their own presentation and sequence of instruction would not have been as orderly and clearly given. They enjoyed the experience.

E) Our teachers, I believe, have gained much more respect for the efforts of some publishing concerns in their realization of the amount of time, technical skills and earnest efforts that are made in the development of a program. From our point of view, it is clearly evident that schools, in general, cannot easily say that we'll plan to "program" part of their curriculum. The job is tremendous, and a working knowledge of the new technology of programing is not very apparent in most of the professional staffs of schools.

F) We have been impressed with what the new technology is trying to show, and trying to do. Teachers are just beginning to understand the necessity of learning a "new language of learning theory" as may eventually be applied in their day to day classroom experiences. Terms such as strategies of learning, systems approach to instruction, task analysis, input, output, quality control, simulated environments, shaping, and behavioral analysis are but a few of the influences which are a part of the intricate world of the programing technologies.

G) As I met with the teachers while working through their units, the following remarks were frequently expressed:

(1) "I probably should be entering into the program more often."
(2) "I should probably take more efforts to ask more individual students more individual questions."
(3) "They seem to respond better when I take a more active part."

I think that these expressions reveal a certain timidity on our behalf to teach in as natural way as we feel that we should with programed materials. These teachers now feel that they would definitely interact with their students and the program the next time around. One obvious problem with this valuable extension of the use of the program is time. Reorganization of staff may be implied.

H) In a paper presented by Rober Gagne of Princeton University, at a symposium on Teaching Machines and Mathematics Porgrams, he state,[1]

"I am inclined to suggest that the enterprise of developing learning programs is very likely to end up with a high degree of similarity to that of developing mental tests.. It seems to me that it will continue to require the separate functions of content specification, communication, and development-coupled-with-evaluation."
It has been, in part, through our directly working with researchers, programers, editors, behavioral psychologists, etc. that we have gained both respect and insight into what we may eventually consider a well defined, well constructed, validly tested and effectively used program.

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[1] - Gagne, Robert, Statement reprinted from symposium on Teaching Machines and Mathematics Programs - American Mathematical Monthly Vol. 69, No. 6, June-July, 1962.

I) Lastly, and by no means a small point, we are convinced that if a program is to be used at the most optimum degree of its efficiency possible, that it will take additional planning and thoroughness on behalf of the teacher using the program for a particular purpose. The time spent, however, will provide a bonus of additional information as to what goes on as a student proceeds through a program, and discusses fine points of content and concepts which may have been completely missed in other situations. Our teachers are becoming more sensitive to what their students are thinking, what they are looking at, and how they are reacting to the materials (new or old) with which they are teaching.

STUDENT INTERCOMMUNICATION SYSTEM

James P. Maguire, Advanced Educational Systems Inc.

Introduction

The problem of intercommunication between the students and the teacher as seen by Advanced Educational Systems, Incorporated will be described in this paper. With this problem in mind, we will describe the objectives that we established for ourselves; and the AID System that was designed and developed to meet these objectives. The major modes of operation of the system in a conventional classroom will be portrayed by a series of slide presentations which will be followed by a description of the future application areas such as: auditorium lecture halls, educational television, teacher training, programed texts, and large scale computer data processing.

Intercommunication Problem In A Conventional Classroom

The effectiveness of classroom instruction in education depends on the degree of communication existing between the teacher and the students. With our present techniques the teacher carries the major load of the communication problem during the presentation of the information; and frequently he does not know the degree of comprehension attained by all the students during his presentation. He can make sample checks on the students' understanding of the subject matter by asking a specific person a particular question, but he can never determine the knowledge for the entire class simultaneously. Without this thorough knowledge the teacher never knows when to elaborate on a specific point or when to move forward in his presentation. The only other alternative he has is to give a test to the entire class and after the papers are laboriously corrected he knows who and how many have mastered the lesson.

Objectives Of The AID System

The following communication objectives are accomplished in the Teaching and Test modes of operation of the AID System:

Teaching Mode

1. All correct answers are recorded for each student in the class.
2. The teacher always knows the degree of receptivity of the entire class.
3. Students must be attentive in order to answer all questions posed by the teacher during his presentation.

Test Mode

1. Students answer test questions at their own rate, and grades are recorded at the teacher's console.

Description Of The AID System

The basic equipment consists of a teacher's console, a remote control unit, student response units for each student, and a low voltage power supply.

The teacher's console consists of a meter showing the percentage of class correct, a test plugboard, counters and lights for each student, five answer switches, a reset switch, a test mode switch, and a power switch. A remote control box operates in conjunction with the console to allow the teacher to indicate the correct answer while away from the console. The student response units for each student have five answer switches and a correct answer indicator. The low voltage supply has five indicating fuzes for each of the main circuits in the system to aid in the maintenance of the equipment.

Operating Modes Of The AID System

The system is designed to operate in either a Teaching or a Testing mode of operation.

In the Teaching Mode, the teacher presents information to the class, poses a multiple choice question based on the material that has just been presented, and the students respond by indicating their answer by means of one of the switches on the student response units. After the students make their choices, the teacher indicates the correct answer by a switch on his console; and the console indicates the percentage of the class with the correct answer, along with lights that indicate each student with the correct answer. In addition a counter records the correct answer for each student in the class. If the teacher wishes to perform an analysis on how many students gave answers other than the correct answer, he can do so by activating other answer switches on the console, and reading the percentage meter. The student also gets an indication that he has given a correct answer, by a light on the student response unit.

In the Testing Mode, the students reset their response units to question number one in conjunction with the teacher's reset switch on the console. The teacher then sets the correct answers for each question by means of small pins that are placed in the test unit plugboard. The test questions are given to the students, and they answer the questions at their own rate of speed. Each time they give an answer, they are automatically moved to the next question. At the completion of the test, the student's grades are recorded by each student's counter on the teacher's console. While taking the test the student gets a light indication each time a correct answer is given; and if he marks those questions that he did not get correct, he can get the correct answer when the teacher reviews the test.

Application Areas For AID System Concepts

The AID System can be used in a conventional classroom for a majority of the subjects presented in our educational curricula today. It is safe to say that wherever the multiple choice concept can be used the AID System can be used effectively.

Typical applications for future AID System concepts are:

1. Auditorium lecture halls where a large number of students are assembled. The communication level is most difficult to maintain at a high point when so many are involved; and it is here

that the lecturer will profit most from the electronic assistance provided by the AID System.

2. Educational Television also suffers because of the undirectional flow of information. The AID System could assist a "live" presentation by providing feedback; and if the presentation is taped, the response system would indicate where editing would improve the instructional quality.

3. Teacher Training also appears to be an ideal application for the AID System. Here the student teacher can readily measure his effectiveness in presenting information to a class using varying techniques for different subjects.

4. Programed Texts could be used in Student Carrels where the pre-programed answers could be stored in the test plugboard at a central console which would monitor the individual student's responses and record his progress.

5. Large Scale Computer Data Processing could be integrated into the system by converting the student responses to digital coding suitable for storage on magnetic tape. These tapes could then be processed by high speed computers which could perform analyses on total class response, along with storing information on the complete educational history of each individual student.

Conclusion

The electronic communication system, as examplified in the AID System, has a tremendous potential that has not been fully explored in the field of educational communications. The applications for equipment of this type include a very broad spectrum of the new media for improving communications along with the basic teacher-student communication relationship in conventional classrooms that our present educational system is based upon.

The ever-increasing workload on the teachers of America is demanding a solution that only electronic data processing can resolve. With the advent of automation and data processing in all fields of American industry, can we in education hope to meet our responsibilities without the assistance that the AID System can provide?

NEW YORK STATE SUPPORTED RESEARCH IN PROGRAMED LEARNING

Marjorie Lehman, Rochester

In the past few years the growth in scientific and technological developments has inflicted heavier demands upon the educational system. Since World War II the rapid development of knowledge and the constant instability of international relationships has stirred national and state legislation designed to foster improved educational programs. There is, also, a greater awareness in local communities of this necessity. Therefore, both the immediate community, as well as the broader state, national, and international communities dictate that local educators explore all avenues towards the end of a more effective and efficient educational program. The promising claims of programed instruction offered one possible approach to meet these demands and to partially satisfy these needs.

Local interest in the possibilities and potential of programed instruction made its impact upon the educational scene in Rochester during the early 1960's. As a result, in the fall of 1962, the City School District began a study of the place and effectiveness of programed learning in its fifty-two schools and among its 45,000 pupils.

To coordinate this study and to aid teachers in the selection and use of appropriate materials, a programed learning specialist was appointed. This Programing Chairman was directly responsible to the Assistant Superintendent in Charge of Instruction.

Most of the first year's work was done in the elementary schools. A survey was taken of all elementary school teachers to determine which of these teachers desired to use programed materials. Orientation sessions were then held for all interested teachers, after which these teachers began using programed learning units in their classrooms. Pre-tests and post-tests,as well as the comments of teachers and students, were used to evaluate the materials.

As the year progressed, it became increasingly apparent that we must begin to gain experience on a larger scale. It was felt this should be done within the environment of the school while considering our own curriculum requirements and using the skills of our regular instructors. It was noted that the majority of the available studies had obtained their impetus from universities or research centers which involved highly specialized personnel. In contrast, it seemed more realistic to us to involve personnel who were faced with the daily task of supervising and teaching in the public schools. This type of thinking provided the background for the administrative go-ahead to develop an experimental design for a large-scale controlled experiment which could be eligible for state aid. The responsibility for the design was shared by the Research Director and the Programing Chairman. After several consultations with the State Education Department, University consultants, subject area consultants and our Director of Elementary Education, a proposal was submitted.

In brief, the fifty-eight page proposal outlines a design for a one year project which was to involve 2700 pupils at grades 5, 6, and 7. The study was to explore the relative effectiveness of three instructional approaches in the teaching of science and mathematics. The instructional methods compared were programed instruction alone, traditional instruction alone, and a combination of the two methods. Essentially, the experiment was designed to determine which of these methods would yield the greatest student achievement gains, which ability of students (high, average, or low) would benefit most from each of these methods, and whether pupil dependency would affect achievement under these three methods.

The State Education Department approved our proposal, as submitted, for implementation in the 1963-64 school year with just one "minor" exception. The budget was cut by approximately one-third.

Our Research Department carried the entire responsibility for the experimental design and the analysis and interpretation of the data. My role as Co-director of this experiment has been involved with the instructional application of programed materials and the administration of procedures and details vital to the success of the experiment.

Thirty-five of our forty-three elementary schools were involved in varying degrees by the experiment. Without state funds such a comprehensive undertaking would have been impossible. This is not, however, the sole benefit of state involvement.

The fact that this experiment was state-aided seemed to lend prestige and importance to the total effort in the eyes of those who were asked to participate. The feeling that they were "blazing new trails" motivated both students and teachers.

Not to be minimized was the effect that experimentation had upon the teacher of the traditional method who seemed to be challenged to excellence. Some of the best teaching I have ever observed was carried on in many of these classrooms where teachers were being truly creative, and, in turn, were inspiring creative thinking on the part of their students.

Consider too, the fact that the extra funds allowed more students to have an opportunity to use programed units than would have been possible otherwise. Approximately 5000 programed textbooks were used by 1800 students in the project, alone.

With this added opportunity, however, came a great amount of administrative planning, data collection, and clerical work. It was at this point that the cut in our proposed budget was most detrimental. The deletion of a research assistant and a second clerk from the project proved to be unrealistic in light of the scope of the experiment. As a result, the Co-director was prevented from providing individual guidance to teachers and was severely curtailed from observing the application of the instructional methods in the classrooms. It proved necessary to take the City School District's research assistant from his regularly assigned duties to work on the research activities of the project. This consumed well beyond one-half of his time.

The experimental period extended from February until May of 1964. Five units in science and three units in mathematics were taught via the three instructional methods.

The basic method of analysis employed was a two-way treatment-by-levels analysis of covariance technique. Analysis was completed on the IBM 7074 electronic digital computer at the University of Rochester.

Achievement gains of students using the three methods of instruction were compared for each of the units. No differences in achievement were found among the three methods in three of the nine units of instruction. A tentative conclusion, based on the other six instructional units, indicated that students receiving instruction from programed textbooks alone achieved significantly less than students receiving instruction by either of the other two methods. It was observed, however, that bright students achieved more from using programed materials alone in some cases than they did when the same concepts were supplemented with or taught exclusively by the traditional method. In contrast, students of average and low ability consistently achieved less when receiving programed instruction alone than did students using the other two methods.

Superficial consideration of these findings raise some rather disquieting questions regarding the value or effectiveness of programed materials - particularly for the student of average or low ability. However, a deeper look would demand a closer scrutiny of the actual program utilized in relation to its suitability for the learner. As was suggested by Wilbur Shramm in his introduction to the Four Case Studies of Programed Instruction "The more the responsibility for teaching is carried by the program, the better the program must fit each student's needs and ways of working ... taking into account the individual's reading level, present understanding, approaches to meaning, and other characteristics." It is obvious that programs in their present form do not satisfactorily meet these criteria for every child at one grade level in our school system. The best program available is of little value in the hands of a student who does not have the prerequisite skills upon which the program is built.

With these and other considerations in mind, we attempted to design a continuation study to include different programs that would be more suited to a student's ability rather than his grade level. Our design will include tighter statistical control which, hopefully, will yield more valid results. On December 1 we expect to launch the first group in the actual experiment. Despite our present research activities, we can still forsee many unanswered questions such as:

1) How can we best and most effectively utilize available programs?
2) Is there a better way to individualize a program?
3) Are there not other paradigms or modifications of present paradigms which could be developed to improve efficiency of learning?

Perhaps one solution would be the granting of monies for the development of programs which will be more individualized, rather than for the controlled evaluation of programs written for the illusive "average" student.

Programed instruction has much more to offer than we have been able to observe to date. Its possibilities are as exciting as they ever have been. My only hope is that we who are responsible for its present use in our schools and classrooms are equal to the challenge of stepping over its present limitations to merge our creative vision with concrete developmental research. Such a combination will yield the satisfying rewards of better and more effective applications of programed learning and will provide one more way to help equip today's student for tomorrow's world.

miscellaneous

CURRICULUM MATERIALS CENTER: THE PHILOSOPHY

Murray G. Phillips, Hofstra University

The title of this program is an imposing one. It speaks of curriculum, of materials, of a center, and of philosophy. For the purposes of this discussion, these terms require definition.

Curriculum is regarded as being different from a curriculum guide. A curriculum guide indicates the general nature of the goals to be pursued by teachers and students during the course of the school year. A curriculum guide is just that, a guide and not a prescription. Since the actual happenings within the classroom vary from room to room within any school district even though all classrooms are following the same guide, we must apply some name to these actual happenings. The curriculum for a particular classroom, then, is an exact description of what has actually transpired during the course of the school year as the teacher and students attempted to reach the goals set down in the curriculum guide. It is obvious that, since no two classrooms approach these goals in exactly the same manner, the curriculum of each classroom is unique and distinct from the curricula of all other classrooms. It is more appropriate in the context of this discussion, therefore, to speak of educational rather than curriculum materials.

Materials are regarded as that complex of media, equipment, and facilities which an institution makes available to its teachers and students to facilitate the achievement of its educational goals. Since this definition is so broad, the word "materials" is inadequate to its intended purpose. "Resources" is more inclusive and therefore preferable term. It does not carry any limiting connotations with it. It includes book and non-book media. It includes all types of equipment: both presentational and production. It includes the space provided for carrying out specific functions: reference, circulation, consultation, maintenance and servicing, production, storage, display, and office.

How shall we define the term "center?" Certainly it refers to place. It is singular and implies that there is some one place where resources should be located. At this point it is only fair to say that the remainder of the discussion, after the term philosophy has been defined, will be devoted to the proposition that there should be more than one center.

From the manner in which I have re-defined all the terms, you may be thinking that I am not happy with the phrase "Curriculum Materials Center." You are perfectly correct. Rather than speak about something distasteful to me, I have taken the privilege of changing the words so that both you and I will be happy. It seems eminently more reasonable for this talk to be retitled "Educational Resources Centers: The Philosophy."

Please notice that the word "philosophy" remains unchanged. I am very happy to accept a standard definition for this term, namely: the body of principles underlying a given branch of learning or a human activity.

Before launching into a discussion of the principles underlying the concept of Educational Resources Centers, it will be useful to state some commonly accepted ideas.

A good teacher is the basic element in a good educational program. School buildings, equipment, materials and libraries have limited value for most students if not used under the guidance of good teachers.

Educational media specialists believe that teachers and students need instructional media with which to work if they are to teach and/or learn at an optimum level. Educational media specialists believe that instructional media help make good teachers better. Educational media specialists believe that instructional media help improve the quality of student learning.

Seven principles are sufficient to make the case for Curriculum Materials Centers or Educational Resources Centers or whatever you wish to call them. Many names have been suggested and are being used in various parts of the nation. They are all valid as long as the exact meaning of each term is known to all and no confusion exists.

The seven principles to be discussed represent one approach to a philosophy of Educational Resources Centers. Undoubtedly, other principles can be enunciated. For me these seven principles serve as the foundation for a consistent and valid approach to the provision and utilization of educational resources in educational institutions.

Principle I

Each teaching-learning task requires a unique combination of resources for its successful completion. It is the responsibility of school administrators to provide these resources so that teachers may utilize and make available to their students the appropriate medium or combination of media at the appropriate time and place.

This is a concept which cannot be implemented by unsophisticated teachers. It requires skill and experience in individualizing teaching and learning.

It means that different students studying the same subject at the same grade level require exposure to different combinations of resources. It is not enough for teachers to say that they use audiovisual materials. They should say that they are using different materials with different students. They should say that their choice of materials is determined by the unique learning abilities of each student.

Those students capable of handling abstractions should be exposed to abstract materials. Those students who are able to handle only concrete ideas should be exposed to concrete types of resources. Those students who require prolonged exposure to materials because they learn at a slower pace than other students should have access to materials which will allow them to proceed at their own pace.

This principle also means that different students studying the same subject at different grade levels require exposure to different combinations of resources. The combinations of resources used to teach the concept of magnetism to primary grade children are not the appropriate combinations to be used with senior high school physics students. The background and sophistication of each student must be the determiner of the appropriateness of various resources for that student.

Principle II

Administrative and supervisory attitudes must be such that teachers feel free to utilize a variety of resources. Teachers and students are quick to realize what the atmosphere is with regard to using different media. Teachers will do no more than their administrators and/or supervisors allow. Students will do no more than their teachers allow. Available resources will not be utilized if those in authority make it evident, openly or subtly, that they do not consider it "cricket" to use these resources.

One evidence of administrative attitude is the availability, or lack thereof, of an educational resources specialist to work with teachers. It is not enough to say that there is a building coordinator available. The following questions need to be answered also. Is he released full-time, part-time or no-time from classroom duties? Is he considered to be a curriculum worker or is he the man who delivers the projectors and changes burnt-out projection lamps?

Teachers sense administrative attitude by observing what type of personnel are provided to help them make optimum use of available resources.

Principle III

Teachers can use only those resources available to them. This sounds so obvious that it need not be mentioned. Yet how often is it violated? School districts often adopt new curriculum guides and in effect tell teachers: "Do things differently." How often do these very same districts fail to provide their teachers with any new resources to enable change to take place?

Change requires more than good intentions and administrative sanction. Change must be facilitated.

The degree of availability of resources is determined by several factors: quantity, quality, variety, balance, and physical facilities.

An obvious requirement is that a balanced collection containing a wide variety of high quality resources in sufficient quantity be available in a structure whose facilities enable teachers to use these resources with ease and dispatch.

A balanced collection is one which supports all areas of the curriculum. No one subject area should be favored at the expense of others. A collection has variety when it contains many different types of resources. A collection consisting entirely of filmstrips, all of which pertain to language arts, has neither variety nor balance.

Sufficient quantity of anything can be determined only by demand. It is apparent that at least one of any given item must be present. No arbitrary national standard can serve as the sole determiner of how much of this type or that type or equipment is sufficient. Degree of high quality usage can be the only safe guide. Teachers will not use poor quality materials for very long. They soon give up trying because, as far as they are concerned, nothing they would be willing to use is available to them. Quality, therefore, is a powerful determiner of availability.

Physical facilities very intimately affect the concept of availability. Is an opaque projector really available if no classroom can be sufficiently darkened to permit its use? How available is any heavy piece of equipment to that petite second grade teacher down the hall, if she must first find the school custodian so that she can ask him to lug it into her classroom?

Principle IV

Availability of resources is not the same as accessibility. Accessibility means "ease of access." Accessibility is affected by location of resources, by quantity of resources available, and by the amount of paperwork required to receive resources when needed.

The question of where resources are best located does not have a simple answer. Should they be centralized of decentralized? For a school district as a whole, the benefits of decentralization outweigh those of centralization. Decentralization by locating resources in the individual school buildings -- the points of use -- certainly makes for greater ease of access. We do not question the desirability of decentralizing equipment, but some of us still hesitate about decentralizing materials. If we believe in accessibility, then we can make no blanket distinction between decentralization of materials as compared with decentralization of equipment. The prime consideration should be that unless a material, such as motion pictures, requires special inspection, handling, and repair equipment, it should be decentralized.

Once we have decided to decentralize to the individual schools, the question next arises as to whether or not we should carry the process any further. To the extent that decentralization proceeds to the point where no one knows where anything is, decentralization is a hindrance. Common sense and local problems must dictate the extent to which in-school decentralization is carried out.

Location of resources within a building affects accessibility in a different sense, too. Is a projector, stored in the school safe for "safekeeping," accessible? Is a projector locked in a closet accessible?

Another facet of the concept of accessibility is that of quantity. Will teachers consider something accessible, if because of heavy booking requests by other teachers, they can rarely acquire the needed resource at the appropriate time for their classes. To the extent that necessary paperwork is held to a minimum, to that extent will accessibility increase. Paperwork inhibits use to some extent. It should be as simple as possible if we wish to encourage use.

Principle V

Teachers and students must be helped to use resources at an optimum level. When we see teachers and students making fine use of a wide variety of resources, we will normally be correct if we assume that they are not, as the words of a popular song once went, "doing what comes naturally." The vast majority of teachers and students must learn the techniques which lead to success.

An in-service program, formal and/or informal, is a necessity. It is also a never-ending program. Changing personnel and new resources and techniques require some type of on-going in-service activity.

Principle VI

All needed materials are not commercially available. This means that there are occasions when it is quite appropriate for a school district to engage in local production activities. The key decisions which have to be made relate to which types of local production are appropriate and which are not. The important consideration is that required equipment and raw materials be on hand to permit local production whenever it is necessary.

Principle VII

Adequate budgetary allotments are dependent upon community support and understanding. Community support and understanding must be based upon some type of evaluation of the educational resources program. This evaluation must be carried out by the professional staff and reported via the administration to the community. Community support requires understanding. Understanding requires facts and figures. Without some type of evaluation system, long term community support cannot be maintained.

Conclusion

What does all this have to do with Educational Resources Centers? Acceptance of the principles discussed in this paper inevitably leads to the following conclusions:

1. An excellent educational resources program requires that a school district makes available to its students and staff a number of resource centers.
2. These centers must make accessible a wide variety of book and non-book resources and facilities.
3. These centers must be staffed by well-qualified, full-time professionals. No one person can do the job alone. It requires a team effort.
4. These professionals must work with teachers and students as curriculum personnel in helping them to decide which resources are most appropriate for given tasks.

An Educational Resources Center is a facility within a school, which makes available a wide variety of commercially and locally produced book and non-book resources, and which is staffed by a team of qualified specialists who are able to consult with teachers and students as to approaches to solutions to teaching-learning problems and who are able to evaluate the effectiveness of what takes place.

This is my concept of an Educational Resources Center.

VALUES OF AN INSERVICE AV COURSE FOR TEACHERS

Ivanelle Braun, Rockville Centre

It seems probable that your interest in this subject has been motivated by a desire to know if there is a real advantage in conducting a course in Effective Audiovisual Practices on the local level in preference to hoping that your teachers can benefit by courses they may seek in the college of their choice. The course given in Rockville Centre was greatly appreciated by the teachers and the results were most gratifying to the administration.

Perhaps the biggest mistake made in the Communications field is the idea that we have it. We cannot assume that owning equipment and materials presupposes good educational communications. Inservice courses can be very helpful in achieving our goal.

You may find as we have that there may be many benefits to your schools as well as to the teachers. Such as:

1. The director of the program is aware of local needs and facilities and can mold the areas covered accordingly. Teachers are aware of problems for which they may find satisfactory solutions.
2. Requirements for the course can be directed toward the improvement of educational communications in the school system.
3. Liaison between the teachers and the A-V department can be imporved through close association.
imporved through close association.
4. The facilities of the center of operations can be examined and better teacher use can be made of its services in the future.
5. It is important and possible to have many pieces of equipment available for adequate practice in handling, all of which is then immediately available for classroom use. Surely many teachers in your system are acquainted with techniques which are never used due to their lack of competence and a fear of approaching a new tool. Your local program can overcome this handicap.
6. Repeated emphasis was placed on careful evaluation of materials. Teachers were given an opportunity to evaluate excellent, average, and poor visuals. They are now more critical and discriminate in selection of materials.
7. Every opportunity was taken to discuss teaching methods and to emphasize the importance of using the best medium for each learning situation.

Our administration allowed two hours of inservice credit for fifteen two-hour sessions. Our experience bears out our assumption that class size should be limited to twenty. Teachers of Kindergarten through Chemistry were involved. Yet the dropout problem was negligible and it was possible to maintain a high level of interest.

The content of the course follows:

EFFECTIVE AUDIOVISUAL PRACTICES

1. OVERHEAD PROJECTOR - Description and demonstration; available commercial materials
2. OVERHEAD PROJECTOR - Demonstration of classroom use; planning of a lesson supported by overhead projection
3. WORKSHOP - Preparation of master for transparency
4. & 5. WORKSHOP - Preparation of transparencies, mounting
6. EDUCATIONAL FILMS & FILMSTRIPS - Sources and proper usage
7. PHOTOGRAPHY, FLANNEL BOARDS - Local production of visuals
8. LAMINATING, DRY-MOUNT PROCESS - Preparation and care of Classroom Picture Files
9. HANDMADE PLASTIC SLIDES, a student project. Making and uses of them. Operation of LANTERN SLIDE PROJECTOR and OPAQUE PROJECTOR
10. 16mm MOTION PICTURE PROJECTOR - Operation and care
11. FILMSTRIP AND SLIDE PROJECTORS, TAPE RECORDERS - Operation and care
12. TACHISTOSCOPE, CONTROLLED READER - Demonstration, Uses, Programs
13. TEACHING MACHINES & PROGRAMMED LEARNING
14. TELEVISION - Open and Closed Circuits
15. DEMONSTRATION OF LANGUAGE LABORATORY - Presentation of Teachers' Projects, EVALUATION OF THE COURSE

The first meeting was opened to the entire faculty with the intention of informing everyone concerning the uses of the Overhead Projector. A commercial dealer gave an excellent demonstration as well as displaying materials and equipment.

Sessions 3-5 were workshops and we found that the success here depended

Sessions 3-5 were workshops and we found that the success here depended upon ample equipment and an instructor for each five students. We were assisted by teachers already competent in this area as well as commercial personnel.

In the sixth meeting, the class met at the AV Center where they were acquainted with the use of EDFLA evaluation files, local evaluation files, and catalogs as well as the Educational Film and Filmstrip Guides which of course would now be supplemented by the Educational Media Index.

Each participant brought a camera to the class where he either demonstrated its use or learned how to use it. The overhead projector proved useful in explaining the construction of a camera. Preparation of sets of slides for instruction was discussed.

The laminating and dry-mount process was demonstrated by a dealer. Interest in this process led us to purchase the equipment since that time.

The teachers were surprisingly interested in preparing their own plastic lantern slides. This technique has been used with increased frequency and satisfaction since that time.

The entire faculty was again invited to participate in the demonstration arranged by the Educational Developmental Laboratories to show the uses of the tachistoscope and controlled reader.

Programed learining has been introduced in some areas in our classrooms. We all benefited by hearing teacher evaluations of programs in use and future possibilities were discussed.

The merits and difficulties encountered in using open circuit Television in the classes were discussed. The subject of closed circuit TV was presented by a fellow AV Director who is deeply involved in its use. A visit to a school where such an installation could be examined would be helpful for this unit.

A very competent foreign language instructor on our faculty demonstrated his use of the Language Laboratory. This was very interesting to us and immediately roused interest in possible uses of this method for instruction in other subjects.

A further requirement for completion of the course was the preparation of a project which could be put to immediate use in our curriculum and, if practical, copied for use of other teachers in the same area. Almost without exception, these projects were much more interesting and useful than our highest expectations. Several examples may interest you -

In the Guidance Area -

35mm Slides and accompanying recording were prepared to be used as a means of orientation of 9th graders to the Senior High School. These materials have replaced, with a good economy to the district, a 9th grade bus trip to the school which had been considered far from effective.

In the Chemistry Department -

A file of available commercial projectuals was prepared, sample

procured and previewed. could be in-

copies procured, and previewed.

A careful study made it clear that AV materials could be included in the curriculum to effect an improved program.

The result was the preparation of a budget presented to the Board of Education for consideration of purchase of equipment and materials. Many of these items were purchased and are now in use. The project came as a real surprise since our Doubting Thomas of this department had previously been very dubious of the value of any AV medium in this particular subject.

In the Home Economics Department -

The instructor prepared a very useful reserve lesson for the use of a substitute teacher. The material was tape recorded and accompanying materials prepared.

Both commercial and professional people assisted in covering areas where they could be most helpful. In this respect, my association with the Long Island A-V Council was most helpful.

The interest shown by our Director of Instruction was instrumental both in making the course possible and in motivating interest in it.

If your administration should question the value of such a course, a very strong point in its favor is the maximum utilization of instructional materials already owned. Another point is the economy of efficiency that may be achieved in improved instruction. As an example of this, the use of the tachistoscope has reduced instructional time by 30% in our typing classes. A similar result is felt possible in Chemistry classes with the use of the overhead projector.

Successful completion of this course may convince your teachers that what has been termed audio-visual aids to learning is in truth basic materials.

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DEVELOPING AND USING "MEDIA" KITS

Richard Hubbard, State Education Department

The topic for development via this multimedia presentation is "The Intersect of Materials and Devices as Applied to the Pedagogical Process" or "Developing and Using Media Kits".

INTRODUCTION

A recent development, at least in terminology and in concept, is the cross media use of materials and related activities appropriate to a specific topic. By cross media we mean the use of more than one type of material for the teaching of a specific concept or topic. It is obvious that at times one medium is more appropriate than another in teaching a particular lesson to a particular group. Then, too, a certain medium may be better for motivation, development, or culmination. The creative teacher uses that medium which is most effective for the occasion. It was with this correlated application of educational communications media in mind that a package, or kit, of teaching materials was recently planned and collected on the topic, The Solar System and Beyond, for grades 2,3, and 4. These materials included 16mm sound motion picture films, filmstrips, sound filmstrips, shortstrips, flannel board materials, overhead materials, flat pictures, and charts.

Reasons for Developing Kits

As a teacher prepares to teach a new unit, literally hours and hours can be spent in searching out, securing, and evaluating educational communications materials appropriate for his use.

It seems logical, therefore, that if much of this sifting and choosing could be done by competent personnel and the core material developed into a kit available to the teachers, that time spent on this chore could be greatly reduced. In addition, a well designed and carefully written lesson guide full of resources, utilization ideas, and curriculum integration plans could well save time and stimulate ideas for the classroom teacher. Research has pointed out that the use of materials in an organized and "programed" fashion produces more learning in a shorter time and this learning becomes more permanent. The psychological factors of perception and reinforcement are at work in this type of teaching and learning, therefore, becomes more efficient and effective. The barriers to communication seem to become less as these materials are used in a logical sequence. It might be emphasized at this point that the more assistance which can be given the teacher in organizing learning activities, in addition to regular lectures, the resulting time saved allows the teacher to provide more extensively for small group needs and individual differences.

Kit Development Considerations

There are certain considerations which must be taken into account when kits are being developed and used:

1. The development of a kit involves team effort - curriculum and educational communications specialists, librarians, and teachers. Production technicians may well be involved to design and make materials not available commercially.
2. A school or a school system should have an instructional materials center organized so that kits can be more effectively developed and distributed. All resources must be investigated.
3. The existing materials plus the new ones developed on a particular subject will be many. A prime source of current materials is the Media Index. Someone needs to know about these, preview them, and replace the inadequate ones.

To develop any teaching kit, the exact topic (or unit), intended audience (or grade level), and specific purposes (or objectives) should be determined. Then certain steps may be followed:

1. Gather the Material
   Refer to all available resources - producer catalogs
   special lists & publications
   Select and order for preview all
   appropriate materials - Media Index
   Service guides
   Education Progress

   Motion pictures are relatively expensive and cannot always be included physically in the kit. With advance planning, however, films suggested in the teacher's guide can be rented or obtained from regular sources. In the not too distant future, 8mm sound motion pictures in cartridges may offer a more economical product which can be purchased.
2. Preview and Evaluate the Material
   Look at each material carefully determining whether it is core, supplementary, or not appropriate for purpose. Determine what concepts are best developed by which materials. Whenever gaps remain or existing materials do not seem appropriate, local production should take place. The teacher can suit his particular needs by planning and making such materials as tape recordings, overhead transparencies, 2" x 2" and or 3¼" x 4" slides, models, dioramas, bulletin board displays, and charts, posters, 8mm motion pictures, and flannel board materials.
3. Write the Teacher Guide
   Break the major topics of the subject into specific concepts. Write an outline showing where materials fit best. Add activities related to the concept indicating motivational, developmental, or culminative utilization. Develop lists and resources for the appendix.

4. Use and Evaluate the Kit
   Have the kit tried in several teaching situations. Gather comments as to the kit's usefulness. Add to it from time to time to keep it up-to-date.

The Kit and How to Use It

Let's consider what we have to work with. The items in this particular teaching package include:

(12)	Films,
(40)	Filmstrips,
(4)	Sound Filmstrips,
(6)	Shortstrips,
(23)	Overhead Transparencies,
(24)	Flat Pictures,
(2 sets)	Flannel Board Material, and
(12)	Charts

A special filmstrip projector completes the kit with a wide variety of instructional materials. A teacher's guide has been specially prepared to help in using the kit.

All concepts are correlated with the suggested curriculums and grade placement of the recent New York State Education Department syllabuses - Science for Children, K-3; and Science for Children, 4-6. There is a definite emphasis on the media and activities related to them rather than repeat the reservior of suggestions in the syllabuses.

The activities have been categorized as introductory (or motivational), developmental (or basic teaching), and culminative (or review). Although an activity or material has been included in one of these categories, the teacher may use it wherever he feels it is appropriate and serves his specific purpose. Also a material may be used more than once either by the class or as a whole, by a committee, or by an individual. The format of the teacher guide includes a listing of each major heading within the Solar System subject with a breakdown of concepts, with their suggested grade placement. For each concept or group of related concepts, learning activities and supplementary information are listed. Detailed descriptions of activities are listed in the appendix. Also listed as appendices are: annotated list of all materials (by category and by company), a list of equipment and materials assumed on hand at school, teacher and pupil bibliographies, and list of free and inexpensive materials. The teacher guide and the State syllabuses should be used as companion pieces.

The key to the success of any teaching kit is the manner in which it is used by the classroom teacher. Like any good teaching, it requires advance planning, correlation of good quality materials, and appropriate content, proper application, and evaluation of effectiveness. Teaching kits can be devices to help improve the quality of education in any teaching situation. Are you ready to give them a try?

PROJECT CUE: CULTURAL ENRICHMENT PROGRAM

Robert M. Brown and Grace N. Lacy, State Education Department

New forces in society constantly press in upon and reshape curriculum and teaching methods. Many people throughout the country have felt that what has been done for mathematics, science and foreign languages should also be done for the arts and humanities. This desire stems from a particular line of thought in our society - an awareness

> that the post-Sputnik emphasis on science might cause other vital areas of the curriculum to be neglected.
>
> of the necessity of nurturing creativity to solve the problems of a complex age.
>
> of the need to provide bases for the development of moral and spiritual values.
>
> of the necessity for the intelligent use of leisure as automation produces leisure faster than our capacity to use it wisely.
>
> that a basis for understanding other peoples and cultures is needed in a shrinking world.
>
> of the enduring and humanizing effects of the arts and humanities on the individual in a complex, technological society whose influence tends to dehumanize him.
>
> that facts, skills, and methods are not enough for life in today's world.

Sensing these aspirations, the Division of Educational Communications and the Bureau of Secondary Curriculum Development of the State Education Department worked jointly on a project to bring the humanities to all the students. A proposal to integrate the arts and humanities into the curriculum through the newer media was prepared and submitted to the New Media Branch of the U.S. Office of Education. The proposal was approved and Project CUE became operational.

The aims of the project are: to investigate a different approach to studying the arts and humanities; to bring the arts and humanities to all the students so that they may be brought to the highest possible degree of sensitivity to their cultural heritage; to integrate the arts and humanities into the on-going curriculum so that the student might see the inter-relationships of the arts and humanities with other disciplines, and to demonstrate the feasibility of introducing new ideas and materials into the curriculum through packages of the new media.

(In media terminology a package is a group of materials with a guide, selected to assist the teacher to teach a subject, idea or group of concepts.)

The ninth grade was chosen as the level of the experiment and 13 schools throughout the State were invited to participate. In the summer of 1963 the materials were assembled and the working guides prepared in the areas of social studies, industrial arts, English, home economics and science. The first year of the experiment was used to field-test the materials and guides in the 13 schools with almost 3,000 students and 120 teachers.

The project schools are Bronxville, Chateaugay, Charles Dewey Junior High School in Brooklyn, Draper School in Rotterdam, East Greenbush Junior High School, William Floyd in Shirley, Joan of Arc Junior High School in Manhattan, MacArthur Junior High School in Binghamton, Niagara-Wheatfield in Sanborn, Penfield High School, Shenendehowa School in Elnora, Solvay High School and Ver aldi Junior High School in Middletown.

CUE brought one package for each of the subject areas to each school or five packages per school. The packages contained a guide, films, filmstrips, records, slides and other materials for the teacher to integrate the arts and humanities into his subject area. Travelling and permanent exhibits of arts materials were loaned to the school to create a stimulating atmosphere from such sources as the National Gallery of Arts, the Asia Society and the New York State Museum.

Lincoln Center for the Performing Arts provided program in opera, ballet, modern dance and others. These programs are available to other schools for a nominal fee. The New York State Council on the Arts partially underwrote performances for some of the schools. A 13-program television series, CULTURES AND CONTINENTS, was produced. This series promotes understanding of non-western cultures through their arts. Mountain-top experiences are brought to the student through visits to Angkor Wat, Macchu Picchu and Brasilia with experts to explain the significance of the arts in these places. This series will be broadcast again this year on educational and commercial stations throughout the State and nation.

Aid, assistance and encouragement were given to communities to use their local resources by visits to museums, patronage of community theatres, and field trips to cultural centers. CUE's NEWSLETTER kept teachers informed of the progress of the experiment and stimulated them through articles showing the value of the arts and humanities in education and news of what other schools were doing. Insight sheets were distributed to give further information to the teachers to assist them in understanding the role of the arts and humanities and their relationships to other disciplines. Utilization of new teaching procedures, such as multi-media and telelecture were encouraged. Visitation, conference and interview were used to stimulate teachers and to obtain their evaluations of materials and guides. Periodic meeting of school personnel were held in Albany.

CUE has been in operation for only a short time, but it has achieved some remarkable results. CUE has heightened student interest and involvement both in subject matter and new interests. Many students, when properly oriented, reveal a great enthusiasm for opera, string ensembles, ballet and other types of artistic performances. There has been a great stimulation of creativity in the art of painting, writing and handicrafts. The students have exhibited a deeper involvement in subject matter by seeing the relationships of the subjects through insights gained in the arts and humanities.

This stimulation of pupil interest has been true of all types of students and many times those least expected to benefit from the arts and humanities have gained the most. This is one of the main reasons CUE did not preclude any student from its program by pre-selection based on external criteria, for it was felt that all the students could benefit to some degree by knowing their cultural heritage.

Teachers have become involved in more mutual planning and cooperation so that they can provide a more unified educational experience for the students. Teachers have also made better use of newer media bringing many benefits to all the students. The teachers have also experimented with team teaching, large group instruction and television. There have been many psychic rewards as teachers see students grasp a new view of life and school and slowly realize that there may be more to this world than the student's view customarily encompasses.

The role of many teachers has changed noticeably. This is especially true of art and music teachers who are frequently called on to lecture on color and sound in science classes or to explain nineteenth century painting to English classes studying the literature of that period. The science teacher may find himself explaining the science of sound to a music class. These changing roles have added new life to many courses.

The materials and guides proved quite successful in their field tests in the last school year and many valuable suggestions have been received. Package guides were published in 1964, and plans have been made for a student's guide, which will be published in 1965.

During the present school year the project schools will serve as demonstration centers for other schools in the State. Teachers, parents, administrators and other interested groups are invited to visit the school nearest to them to see how CUE operates and to learn how they may bring CUE to their schools. The project staff has prepared a "do it yourself" CUE manual, which shows how to start a CUE program in schools. This manual, plus the subject guides, will enable a determined professional staff to bring CUE to their students. All of these publications are available to schools from Project CUE at the State Education Department in Albany, New York.

REACHING THE CULTURALLY DIFFERENT CHILD THROUGH AUDIOVISUAL APPROACHES

Kathryn Hearle, New York City Branch of Education
Helen Hildebrandt, New York City Public Schools

A. Who Is the Culturally Different Child?

He is:

1. Physical and visual styled rather than aural.
2. Externally oriented rather than introspective.
3. Inductive rather than deductive.
4. Verbally inadequate since he is deficient in formal language.
5. Fearful of failure.
6. Frightened of everything - the size of the schools and city, the strangers everywhere, the fear of being scorned.
7. Eager to learn if he is given a chance of success.
8. Misunderstood by many teachers who cannot adapt to teaching more thoroughly and more slowly.
9. Shy, inarticulate and very eager to please for the most part, sometimes over-aggressive and badly-behaved if the home situation lacks parental strength and care.
10. Facile in "tuning out" the teacher who, through insufficient motivation and preparation, has failed to reach him.

B. Here Is His School

Public School 61, Bronx, New York City

Pupil Register - 1,958 - as of October 30, 1964

6 Kindergarten classes
12 First-grade classes
11 Second-grade classes
10 Third-grade classes
9 Fourth-grade classes
9 Fifth-grade classes
7 Sixth-grade classes

Total: 64 classes

Ethnic Pupil Population

Spanish-speaking children - 60%
Negro children - 38%
Others - 2%

Building Facilities

Classrooms - 46
Portable classrooms in school yard - 12
(No outdoor play space)

The 12 first-grade classes share rooms, on back-to-back session, 7:30 to 12:00, 12:00 to 4:00.

Personnel Involved in Planning

All grades - 4 teachers ≠ 2 supervisors ≠ 1 team leader
from Grade 4 ≠ 1 team captain ≠ 1 materials teacher

C. Reaching Him is Teaching Him!

The culturally different child cannot be taught in the old traditional fashion.

It is a fact that teachers tend to teach their pupils as they had been taught.

They are frustrated and harrassed when the familiar ways are unsuccessful. Many teachers feel that the different child is impossible to teach so they lost heart and are despairing.

This is extremely unfortunate since the advent of the different child should be considered a blessing rather than a disaster.

This blessed youngster has shaken the complacency of educators and standard educational methodology. The earthquake has been long in coming and is a splendid thing. We needed it.

Our teachers have been accustomed to teaching children whose parents were eager to aid the educational process in every way. Home standards and care were the order of the day.

The culturally different child is giving his teacher the chance to prove her ability as a teacher in the truest sense. Can she adapt herself to different ways of teaching? Can she be creative? Can she be experimental? Can she meet the challenges of the day with courage and a belief in the worth and high potential of the youngster before her?

D. How Do We Teach Him?

There are innumerable new approaches.

At this time I will explore only one - TEAM TEACHING.

E. The Benefits in TEAM TEACHING

For Our Teachers:

1. Professional growth. Teacher training opportunities are excellent.
2. The realization that teaching can bring successful results if we do not allow our children to fail.

3. The inestimable values of cooperative planning, preparation and strong motivation.
4. The opportunities for creativity and originality.
5. The use of splendid BAVI facilities in presenting large-group and class lessons.
6. The prestige in being a team teacher or leader.

For Our Children:

1. Training in the use of modern methods of communication (overhead projectors, microphones, tape recorders, records, television, radio, realia, etc.).
2. Training in the socialization procedures (speaking in sentences, standing to speak, the use of names). This serves to habituate the high standards we want the children to acquire. It also forces them to overcome shyness and lack of articulation.
3. Training in listening skills. The impact of the audiovisual lesson presentation helps the child to concentrate.
4. Opportunities unlimited for creative follow-up activities.
5. Exposure to excellently prepared lessons specifically designed to allow the children to be successful - and not to fail.

F. Team Teaching Schedule at P.S. 61, Bronx

Grade	Large-Group Lessons 9:45 to 10:30	Planning Sessions 12:50 to 2:10
5	Friday	Wednesday
4	Monday	Friday
3	Wednesday	Monday

* * * * * *

The Lessons

A. Motivation

1. Must be striking, relevant, colorful, strong.
2. Can often start at the child's level. At times we have used Superman, Moon Maid, Dennis the Menace, and other well-known and well-loved comic strip characters to motivate a lesson.

   The children are surprised that their teachers can be so modern and and so perceptive.

B. Preparation

1. Must be intensive for the child so that when the lesson is presented, he will be successful. We must not let him fail.

C. Lesson Objectives are Three-Fold

1. To teach the Intangibles
2. To teach the 3 R's plus
3. To avoid the lecture aspect by stressing and planning for PUPIL ACTION

D. Lesson Description

To Teach the Intangibles

1. A *Just So* story by Rudyard Kipling, "How the Whale Got Its Throat" was used to have the children learn that:

   1.1 Imagination grows out of one's own ideas, and
   1.2 Ideas can be stronger than force.

2. Courtesy and good manners were presented enchantingly on colored acetates:

   2.1 You are picking dandelions and columbines outside the castle. Suddenly a fierce dragon appears and blows red smoke at you, but just then a brave knight gallops up and cuts off the dragon's head.

   What do you say, dear?

   "Thank you very much."

   2.2 You are a cowboy riding around the range. Suddenly Bad-Nose Bill comes up behind you with a gun. He says, "Would you like me to shoot a hole in your head?"

   What do you say, dear?

   "No, thank you."

   2.3 You are at the princess' ball and she is telling you a secret but her orchestra of bears is making such a fearful lot of noise you cannot hear what she is saying.

   What do you say, dear?

   "I beg your pardon."

3. The values in being "different" were realized through a story about Pepito, who danced beautifully. The other children thought him weird and would not play with him.

   Pepito's grandmother constantly tried to comfort him with these words:

   "If every child were like every other,
   You wouldn't know who was your sister or brother.
   And if every flower looked just the same,
   Flower would have to be each flower's name."

Nothing really helped until the mayor's daughter fell ill. Her worried father did everything to arouse her interest in staying alive, with no success. When he heard of Pepito and his dancing, he sent for him. Pepito danced and soon had the little girl bright-eyed and happy once more.

Everyone was so pleased with Pepito that they all sought his friendship. He had playmates galore. Best of all, he had learned that "It is good to be different."

Thus was taught a major concept for the culturally different child.

4. The spirit of Hallowe'en is often misunderstood by children. Through a delightful story, "Tell Me, Mister Owl" our youngsters were led to a true realization and they then developed their own rules for good, clean fun and safe conduct.

To Teach Language Arts

An overlay of a crossword puzzle was used in a lesson on synonyms.

An introduction to poetry and rhyme was achieved through the charming "My Dog." The children worked at two overhead projectors in identifying the rhyming words. Later, the opportunity to write their own poems was developed creatively and very successfully. Our children were elatedly responsive.

On beautifully colored acetates our fourth-graders were introduced to "A Camel Who Went for a Walk." He met a monkey, a bird, a lion, a tiger, and numerous other creatures. An acetate followed with a garbled version of the story.

In this engaging way out youngsters were taught the elements of story sequence.

To Teach Music

Music instruction lends itself admirably to large-group teaching.

Acetates of the songs that are taught during the regular assembly periods are a MUST at '61. We take full advantage of every situation to have our children read. The Language Arts are an integral part of every learning area.

There have been team lessons to introduce the musical staff, rhythm and rhythmic patterns, and music notation. Instruments are used by the children.

The emotional impact of music has not been neglected. Recordings such as "Sometimes I Feel Like a Motherless Child," "I Know an Old Lady," "Sonata in C Sharp Minor," "The Irish Washerwoman," etc. have been used to elicit creative expression from the children. The rewards have been equally rich in vocabulary enrichment and articulation.

To Teach Science

Some may not agree that science has a place in large-group teaching.

We have lessons to prove them wrong.

A lesson on sound was very effective. Another lesson on air demonstrated that when children are given commonplace materials with which to experiment, they can arrive at basic scientific concepts - in their own language.

One hundred thirty-three children were given plastic bags, an item with which they were familiar. With this one standard item the children discovered:

1. That air takes up room (air occupies space)
2. That air holds things up (air supports weight)
3. That the inside of the bag was wet after it had been blown into. (There is moisture in the air we breathe out)

There were many other learnings; however, the above three items show that the science learning was real, that the children's language is acceptable, and best of all, that the children were led to make the discoveries on their own.

Could these lessons have been as successful in the self-contained classroom? Of course. But the interest that was engendered in the large-group lessons may never have been born without the stimulus of the excellent planning that is part and parcel of large-group instruction.

To Teach Social Studies

Acetate overlays are splendid teaching aids.

In a "Know Your City" team lesson, the first acetate to be projected showed the 5 boroughs in outline. We located the Bronx and had a child block in P.S. 61, his school. The first overlay added Manhattan which the children know well, having been on trips to the United Nations building and the Museums of Natural History, Art, and the City of New York. The second overlay brought in Queens, a very interesting borough since we were anticipating a visit to the World's Fair. Brooklyn and Richmond were added - one by one.

The same overlay procedure was used in subsequent lessons to teach the bridges and tunnels of New York City.

The teachers were gratifyingly surprised that the high interest level attained in the large-group lesson was maintained and even surpassed in the follow-up classroom lessons.

To Develop an Appreciation for Literature

This has been our most successful area. We have amassed a library of lessons that project beauty - in reality.

The beauty in literature, prose and poetry, has become a living, vital thing for our children who otherwise would see very little of it. Our objectives are to overcome cultural deprivation and to have our boys and girls realize that reading can influence and transform life.

A Bemelman's story "Madeline and the Bad Hat" was used for pupil enjoyment and to develop criteria for judging books. Our librarian reports a land-office business.

Children's Creative Efforts

The following examples of creative writing were results of follow-up lessons in the self-contained classroom.

FALL IS A PERSON

Fall is a woman. When she is cutting her hair, it looks like leaves falling down. And when she puts on perfume, it smells like the fresh air of fall.

Elsie S.

HOW DID THE ZEBRA GET HIS STRIPES?

I think the zebra got his stripes when a man was painting a bench. The zebra did not know how to read so the zebra went to sleep on the bench. When the zebra woke up, he had his stripes. And that's how the zebra got his stripes.

Iris L.

Pupil Evaluation

When the children were invited to express their opinions on team teaching, the following contributions were made:

OUR TEAM

I like team teaching because at that period I can talk through microphones and they teach me how to talk properly instead of just blah, blah, blah. I like team teaching because you can meet new friends and teachers that you have never seen before.

Leo M.

WHAT TEAM TEACHING MEANS TO ME AND TO OTHER CHILDREN

Team teaching means a great deal to me because it helps me with my work. And it helps other children too, so those of you who want to learn, listen to team teaching. You will be proud of yourselves.

Robert R.

WHAT TEAM TEACHING MEANS TO ME

Team teaching has done a wonderful thing to me because I learned how to speak in whole sentences. The teachers who taught me how to speak in whole sentences are: Miss Zemlowitz, Miss Sayers, Miss Tabb and Miss Schild. They are wonderful teachers. They teach us about poems and stories without endings. I like team teaching because I learn very much.

Lillian R.

WHAT TEAM TEACHING MEANS TO ME

Team teaching is very wonderful. When you go to team teaching you learn about poetry. You learn more things that you did not know. That's why team teaching is so wonderful.

Lester M.

WHAT TEAM TEACHING MEANS TO ME

Team teaching means fun to me. The teachers we have are Miss Zemlowitz, Miss Sayers, Mrs. Tabb and Miss Schild. They all are great teachers. One teacher has to teach four classes and I think that is very hard. I like team teaching very much.

Elsie S.

WHAT TEAM TEACHING MEANS TO ME

Team teaching means a lot to me because as I said, you have fun while you learn.

Joan A.

WHY I LIKE TEAM TEACHING

I like team teaching because I like the lessons very, very much. I also like to talk into the microphone.

Elizabeth S.

WHY I LIKE TEAM TEACHING

I like team teaching very much. I like it because we learn much more interesting things. In team teaching the teachers read us stories without endings. I used to think that they all had endings, but they don't.

Maritza M.

WHAT I THINK ABOUT TEAM TEACHING

I think team teaching is very important because we learn a lot of poems and famous people's stories.

Julia E.

WHAT TEAM TEACHING MEANS TO ME

Team teaching means a lot to me. We learn about different books and many interesting activities. I like all the teachers that help make team teaching so wonderful. At team teaching we use our imagination once in a while. At other times we use our heads. Team teaching is a good opportunity for all children to understand clearly. That's what team teaching means to me.

Francine F.

WHAT TEAM TEACHING MEANS TO ME

Team teaching means a lot to me because you learn and you learn more than what you know already. It means a lot to me because the teachers are wonderful to get up and tell us about things we didn't know. Some kids don't realize how lucky they are to have such good teachers. I think that people who don't have team teaching in school should get it and learn how to start it.

Donald F.

WHAT I THINK OF TEAM TEACHING

I think that team teaching is fun. I like the idea of working in one big group. I also like to talk into the microphone. I have already gotten a star and I am proud to wear it.

Another reason why I like team teaching is that we learn things that not even the teachers know. We learned that poems can tell stories and show pictures in our minds and other wonderful things.

I just love team teaching and hope you do too.

Dennison J.

Dennison said it for me, too.

AUDIOVISUAL IMPLICATIONS DRAWN FROM RESEARCH ON THE DISADVANTAGED CHILD

Allen Landowne, New York City Board of Education

TEEN-AGERS SPARK RIOTS IN NINE CITIES!
MANY TEEN-AGE DROPOUTS UNEMPLOYED.

Headlines such as these remind us of our personal stake in the successful education of culturally disadvantaged children. The slum child who reaches high school three or four years retarded in reading will become an uninformed citizen, an unwanted worker with minimal purchase power, a frustrated rebel against the society that provides a good life for others around him.

In Slums and Suburbs, Dr. James B. Conant writes: "In a slum section composed almost entirely of Negroes in one of our largest cities the following situation was found. A total of 59 per cent of the male youth between the ages of sixteen and twenty-one were out of school and unemployed. They were roaming the streets...."The fate of freedom in the world hangs very much in balance.....Communism feeds upon discontented, frustrated, unemployed people." (#2, pp. 33-34).

Dr. Conant goes on to point out that, unlike that of our earlier minority groups, the situation faced by Negro youth is alarming because of a lack of conviction that they can rise out of poverty, because of an unstable societal origin, and because of the impact of automation on the demand for unskilled labor. (#2, p. 37).

In their desire to obtain a reasonable education for the children of impoverished homes as well as to cooperate with representatives of minority groups seeking more effective education for Negro and Puerto Rican children, educational authorities have allotted increasing amounts of attention, funds and personnel to the task of raising the achievement levels and cultural horizons of disadvantaged children.

What can we do as teachers, administrators and producers to hlep solve these problems? The first question to ask is, "What are the characteristics of the culturally disadvantaged child that tend to retard his educational achievement?"

Recent studies by psychologists and sociologists offer similar, although not always consistent, findings and theories. While there is rarely any suggestion of the possible use of audiovisual materials in helping these children to learn, the informed audiovisualist will be excited to find that the proven values of the proper use of A-V methods and materials have an obvious role in the instruction of the culturally disadvantaged child.

A. Non-Verbal Learning Style

Frank Riessman has stated:

"The whole style of learning of the deprived is not set to respond to oral or written stimuli. These children respond much more readily to visual and kinesthetic signals. We must remodel the school to suit the styles and meet the needs of these children." (#10, p. 8).

In a recent report of a study of first and fifth grade pupils in 12 schools in New York City, Martin Deutsch and his associates reported that:

"Social class differences in certain receptive language skills are considerably more apparent at fifth grade than first grade." (#6 p. 123).

"It is clear," they concluded, "that the auditory mode of presentation was quantitively more difficult for the children than the visual form was." (#6, at p. 129).

Implications for the Educator

"The findings of this broad study of expressive and receptive language in children have the following implications for the educator:

> Children disadvantaged by conditions related to social class status and/or minority group membership require special training in such language areas as vocabulary development, general ease in self-expression leading to lengthy but meaningful verbalization, greater exactness in sound discrimination and in precision in the use of language." (#6 pp. 129-130).

What are the implications for the audiovisualist? First, we need to provide enriched background experiences.

"At the first grade level the disadvantaged child's experiences seem to have been relatively sufficient to provide him with certain language skills. By the fifth grade, however, he does not seem to have had the background of experiences....necessary....for expressing himself meaningfully in complex sentence structure." (Deutsch et. al., #6, p. 118).

These investigators found a drop in performance on verbal tests and on tests of general intellectual ability during the school years, particularly with a "cumulative deficit" among lower social class Negro youngsters in homes broken by absence of father. They have attributed this drop in performance to "limited enrivonmental stimulation." (#6, p. 119).

From the Orbis Pictus of Comenius in 1658 to Edgar Dale's "cone of learning" the audiovisual movement has offered the theory, methods, materials and equipment for providing enriched background experiences for children "Audiovisual materials, by adding picture and sound, by bringing the faraway in time and place into the classroom, or by enlarging what is too small to see with the naked eye, make words stand for something and lend meaning to facts and concepts which are vague when conveyed only in words." (Freedman, Florence B. and Berg, Esther L., Classroom Teacher's Guide to Audiovisual Materials, Chilton Company, 1961).

Deutsch feels that it is the lack of variety of environmental stimulation, rather than a lack of quantity, that leads to a deficiency in the equipment required for school learning (#4) (#5).

Sexton (11) points out that poorer children, less mobile in crowded areas, are "deprived of the broad range of life experiences......... which give children confidence in themselves and interest in their studies." (p. 144). She urges that schools open up this world of experience to lower-income children through trips, T.V., movies and other media. (p. 146).

B. Need for Physical Learning Experiences

Frank Riessman, in "The Culturally Deprived Child" (#9), includes the following characteristics of the deprived child's style in his summary (p. 72):

> "1. Physical and visual rather than aural.
>
> Externally oriented rather than introspective.
>
> Problem-centered rather than abstract-centered.
>
> Inductive rather than deductive.
>
> Special rather than temporal...."

Since the deprived individual appears to learn on a "much more physical or motoric fashion" (p. 29), Riessman suggests drawing, singing, role-playing and programed instruction.

"Perhaps music forms more attractive to the disadvantaged, such as spirituals, jazz, and blues, could be introduced more frequently in music courses." (p. 32). He urges teachers to "stress the visual, the physical, the active, as much as possible." (p. 80).

The recognition of the value of involving muscles and tactile senses in fundamental learning operations has led to a revived interest in the work of Maria Montessori "Schools, Slums and Montessori," Martin Mayer, in Commentary, Vol. 37, No. 6, June 1964, pp. 33-39).

Teachers may provide physical experiences in the classroom through the use of pupil - made materials. Among these are the 3 1/4" X 4" slide, the large transparency, the tape recording, the inexpensive photograph and the drawing used in an opaque projector. Using a multimedia approach, we have included in the televised B.A.V.I. in-service course, scenes of a third-year class singing about transportation to the music of a Negro folksong and illustrated by pupil - made 3 1/4" X 4" slides (cf. infra.)

Use of A-V materials to effect "physical" learning does not relieve the teacher of the need to upgrade listening skills as well. Thus by setting up small groups with earphones, teachers can make use of specially-prepared tape recordings or commercially produced recordings; such as, "English Through Pictures." (Educational Services, 1730 Eye Street, N.W., Washington 6, D.C.).

C. Poor Attention Span

Reissman (#9, p. 84) contends that the deprived child has a poor "auditory set," because he is not used to listening to adults give "talks." His learned response to siblings is transferred to other children in the class, rather than to the teacher, creating "behavior problems."

The power of audiovisual materials to increase attention is based on their high motivation effect, their pleasurable content, and on the use of the projected image to remove distractions. This is recognized by the classroom teacher as well as by the business world, from the use of displays to the T.V. "commercial." Let us use this power to help the culturally disadvantaged to learn.

D. Poor Self-Image

In an earlier study (1960), Deutsch found that a relatively high proportion of white lower-class children had "negative self-responses, but not nearly as many as in the Negro group. (#3, p. 11).

He felt that the Negro child sensed that the larger society views him as inferior and expects inferior performances from him, as evidenced by the general denial to him of realistic vertical mobility possibilities. (#3, p. 11). This attitude toward self may act as a depressing factor on scholastic achievement. (#3, p. 19).

At a later conference, (1963), Deutsch stated:

"The best theoretical model for thinking about this, I think, is White's theory of competence motivation. He pointed out that experiences of success and accomplishment engender feelings of competence which in turn generate primary motivation." (#7, p. 39).

Audiovisual materials and methods can enhance the self-image of the disadvantaged child in various ways; e.g., by:

1. Permitting activities which he can perform well, painting and drawing, taking photographs, singing, dancing, role-playing.
2. Providing equipment for group presentation of his efforts, thus enhancing pride of accomplishment. (cameras, projection equipment, tape recorders and even the old "disc recorders").
3. Presenting audiovisual evidence of the cultural contributions made by members of his own race. Many believe that the self-image of a member of a minority group would be enhanced by the use of "human relations" material.

We might in this way increase the respect for that culture by other pupils and by teachers with dissimilar backgrounds, together with the use of social studies material to emphasize a "conscious approach to the teaching of civil rights and civic responsibilities." (#1, p. 2).

E. Lack of Realizable Life Goals

Deutsch found that the Negro boy is "often left with no strong personal male figure with whom to identify. The impersonal ones, from T.V., movies, and other mass media are nearly invariably white and middle class, with the exception of a few sports and entertainment figures." (#3, p. 12).

Dr. Clifford Ettinger, Motion Picture Production Supervisor, will report to this convocation on the plans of the Bureau of Audiovisual Instruction of the New York City Board of Education to produce a series of motion picture films of successful Negroes and Puerto Ricans in occupations which offer realistic opportunities. In simple form, it would also seem possible to arrange for interviews, in and out of the school, with successful graduates, and thus provide a school collection of tape recordings or 8mm films for the information of individual pupils or guidance classes.

The "Unique contribution" is up to you!

In presenting some of the highlights of recent research, together with a few suggestions for audiovisual applications, it is our hope that you in the audiovisual field will be encouraged to envision further utilization and experimentation. With the urgent need and growing public support and money the "unique contribution" is up to you!

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Film Presentation

A third-year class at P.S. 161, 133rd Street and Amsterdam Avenue, Manhattan, is shown in a song session for reading improvement. The words, for a unit on transportation, are sung to a Negro folk-song. These special lyrics were typed, then copied on Thermo-Fax acetate and then mounted as 3 1/4" X 4" slides. Each type of transportation was illustrated by showing a pupil-made hand-colored slide before the words were projected.

Points to observe:

1. Physical activity of singing and clapping follows earlier slide-making.
2. Slide projection compels attention and eliminates distraction.
3. Activity is interesting and pleasurable.
4. Self-image is raised by pride of accomplishment in good singing of a Negro folk-song and in having one's own colored slide shown to the group.
5. Repetition in "answer-back" song provides drill in reading.
6. Large-group instruction permits use of teacher-time for remedial work with small groups.

This film was used as part of a Televised In-Service Course, "Utilization of Audiovisual Media in the Classroom," produced by the New York City Bureau of Audiovisual Instruction. The broadcasts were coordinated by Morris Freedman, Assistant Director, under the supervision of Edward G. Bernard, Director. Clifford Ettinger, Motion Picture Supervisor, and his staff prepared the films used in the series now being shown for the second time on Channel 13, New York.

PROFESSIONAL THEATRE AND THE LANGUAGE ARTS

Paula E. Silberstein, New York City Board of Education

At the outset, let me clarify this title, "Professional Theatre and the Language Arts." By professional theatre, I refer to any performance given on a "stage" by highly-trained, skilled performers or soloists. Thus, we may encompass all the "performing arts."

Now, let me carry you back to the first time you entered a "theatre." It may have been a school auditorium, a converted gym or movie house, the area around a bandstand in a park or on a town green, a street or park where a makeshift stage had been set up, a building specifically built to house "theatrical" productions or some other area improvised and adapted to meet the needs of the performers. To you, it was a "theatre," for it held the promise of a thrilling experience of which you had heard and were now about to encounter. I may be badly mistaken, but I suspect you were never the same after that performance. That hush which falls over an audience, as lights are lowered or batons raised, in anticipation of its admission into the world of stirred imaginations, of empathy, in the truest sense of the word, or pure magic which, for the moment, will be reality, is ever-recurring. To the novice, it is something never to be forgotten, and to be shared, throughout a lifetime, by all who will listen.

The second part of the title, "Language Arts," hardly needs defining for educators. To all of us, it is the art of communication, orally, in writing -- or visually. From the time man first became cogent and articulate, he has utilized these abilities for communication, whether it was by paintings such as those in the caves of Lascaux, the religious dramas of the ancient Greeks, the ritual dances of the aborigine or the twentieth century wonders of the telephone, motion picture, radio and television.

It is important to notice how much of man's communication is done dramatically. When the aborigine wishes to impress upon the boy entering manhood the importance of the occasion, as well as the traditions of the tribe, he dons a mask and costume and enacts what he wishes to have remembered. In the Middle Ages, the church first had simple choral renditions of the Bible stories performed within its walls, only to find that more people could be reached by taking to the streets -- and so the Miracle and Morality plays were born. Today, in Russia and other totalitarian countries, the theatre is being used for propagandistic purposes because it is the perfect medium of communication. The performing arts have always been akin to the language arts. It remains for us to utilize this kinship to the fullest.

For the past eight years at BAVI, we have had a Cultural Resources Program of which I am currently the administrator. The origin of this program stems directly from the language arts area of the senior high schools. To be more specific, some twenty-five years ago, the then president of the New York City High School Teachers of English Association appointed five or six members to a School and Theatre Committee to see what could be done to obtain theatre tickets for students at prices they could afford. A member of Actors' Equity was added to represent the "professional theatre" that had been conjoined with the "language arts." After several years, their efforts resulted in special weekday matinees for which the students paid ten cents to see Jose' Ferrer as Cyrano, Katherine Cornell as Cleopatra, The Winslow Boy, The Importance of Being Ernest and other such worthwhile then current Broadway productions. When this arrangements was no longer feasible, arrangements were ultimately made, with the help of the Mayor's office, for theatre tickets to be made available to classes of students attending with their teachers on off-nights at a vast reduction. In the meantime, the program had been functioning for some time almost independently, with a very tenuous tie to its parent organization. This was broken for good some eight years ago and BAVI adopted the orphan, possibly because discount tickets for worthwhile motion pictures were also being distributed. When the original chairman of the committee resigned nearly six years ago, the committee was disbanded but I, who had been on the committee almost from its inception, was brought in to carry on and expand its work. Today we offer cultural experiences, either directly or indirectly, to all the more than a million children in our public schools, in the fields of drama, dance, opera, concert, readings, motion pictures and whatever other performing arts areas that may arise. From our initial definition, it may be noted that these are all media of communication.

However, they also tie in with language arts in another way. Today, there is great educational emphasis on the need to stimulate an interest in reading, writing and/or speaking. Children must be prepared for any live theatrical experience since their normal exposure to the "lively arts" is the single dimensional, black and white of the television screen and the sometimes colored motion picture screen. Depending on the age of the youngsters, there may be some advance research, study, discussion and writing involved in this preparation. Once the experience is over, the need to communicate reactions is usually so overpowering that the flood gates are burst and many who had been timid and even backward vie for an opportunity to express themselves, however poorly. They talk about it to any one who will listen, discuss it as a common interest with classmates, write compositions giving reactions, original poems, stories or articles for school publications or letters to those connected with the performance. Some may be inspired to go to books for enrichment, research or further information in connection with what they have seen and heard. Imaginations have been stirred and an awakening of interest and an awareness of things beyond the four walls of the home and school have been aroused. This may sound like "a consummation devoutly to be wished" but such results have been attested by the Higher Horizons and other such programs where the stress has been on enriching culturally deprived lives. Perhaps the speaker from CUE* may have discovered that the program has achieved similar results.

If I may, I should now like to give you some of the specifics of our program in the hope that you may find some aspects of it which can be introduced into your school or system. Since the original program started with the high school students, we might also start at this level. However, we now consider the secondary schools, or grades 7 - 12, the age level for which these projects are geared. What are they? They are both for on-school and after-school time, both in school and out of school experiences. Some six years ago the American National Theatre and Academy, know, because of its initials, as ANTA, and representing the "professional theatre" joined forces with the

* Excerpts of students' writings will be found at the end.

Cultural Resources program or "language arts" phase of BAVI to bring on and off-Broadway theatre and these students together. Students now pay $1 a ticket to attend the theatre with classmates and teacher (usually from the English or Speech department) in class sized units on those nights when there are normally empty seats. In a peak season, 45,000 such tickets were sold. Last season, the Shubert interests corralled all Broadway producers in order to give free tickets for Broadway productions to high school students only. This is administered by the Associate Superintendent for high schools through the high school principals. BAVI and ANTA continue to service all secondary school students with tickets for off-Broadway productions. Of course, throughout this program, only such activities as have educational worth and validity are offered. The teacher prepares her students in advance and has material for many hours of class activity afterwards.

Many children, now grown up, have had their first taste of drama this way and have become devoted theatre-goers. Several years ago, when Hamlet was playing at the Phoenix Theatre, I went to several performances. At one of these, a young Negro woman approached me and recalled that I had been her teacher at a vocational high school. She and her husband were seeing the play in the celebration of their fifth wedding anniversary, at her suggestion. She had attended her first play while a student of mine and had returned to see others as often as she could afford it because her first experience had so widened her horizons. Incidentally, many thousand of students saw that production through a student discount program that also included an introductory discussion on Saturday mornings for those attending the matinee. How many have been inspired to write, act or be active in the Humanities through this, or any other of our activities, will never be known but, if even one has been, the program has proven its worth.

Various cultural centers in the City have also become interested in seeing that our teenagers have an opportunity to be introduced to the cultural advantages of living in New York. Lincoln Center for the Performing Arts has a complete Student Program with a special educational fund to further it. Tickets for the performances by the New York City Ballet, Lincoln Center Repertory and Music Theatre Companies and the New York Philharmonic are underwritten so that children throughout the Metropolitan area will be able to feel that Lincoln Center holds something for them. When the Metropolitan Opera Company moves uptown, it most assuredly will continue its policy of student performances from the repertoire as performed by the up-coming stellar singers. Regina Resnik, Rise Stevens, Jeanette Scavotti and other native New Yorkers on the Met's roster are quick to admit that their introduction to staged opera came when they attended a student performance.

For many years, the City Center of Music and Drama has offered tickets at a discount for school groups to all its own sponsored performances except for opening and Saturday evenings. Thus, its normally popular priced, now $4.95 top, tickets could be had for as little as $1.05 for the cheapest seats, enabling youngsters -- and their parents -- to see and hear outstanding performances of opera, drama, musical comedy and ballet. There is some one employed just to handle this phase of the ticket sales because of the importance placed on introducing young people to the performing arts.

The Brooklyn Academy of Music has become interested in this necessity, also, and approached BAVI and the administrators of the Higher Horizons program with a proposition to present special student matinees of operas. The fifth such performance in three years, a performance in English of Die Fledermaus by Johan Strauss, was given before a sold-out house two weeks ago. Since its inception, I have served as narrator, introducing the audience to opera in general and the one to be heard, in particular. I have always questioned the children to find out how many were hearing an opera for the first time, how many were repeats and how many had gone to hear an opera on their own. The number of hands raised in the last two categories has grown appreciably over the years.

Concert managers have become aware in recent years, that unsold tickets offered to BAVI for free distribution to students, will bring a look of a sold-out house, even if it isn't. They have also learned that these audiences are most enthusiastic. When schools became aware of this bonanza for their students and their parents, they wrote in, asking to be considered whenever such tickets become available. One principal of a school, where very many pupils are musically inclined, insists that a student must have attended a concert for which he bought a ticket before he may receive any free ones. The principal arranges for the purchase of blocks of concert tickets for these students who come from a middle-income area. He is thus sure that the student receiving the free ticket is sincerely interested in attending the concert.

Some of the motion pictures that have opened commercially in New York over the past years have been truly adjuncts of the language arts programs of the schools. They are also professional theatre, though not "living theatre," because they are a definite means of communication. Of course, before they were captured on film, they were living theatre, just as were the performances caught on audio or video tape or the plastic used for recording. The producers of such films as Ben Hur, How The West Was Won, Windjammer, the Cinerama travel films and other current ones feel so sufficiently interested in bringing students to their productions that they employ some one solely to handle the sale of tickets at 99¢ to the special student matinees they set up, after consulting us and others as to the educational worthwhileness of using the experience as a co-curricular activity. Films that have been made from books or plays are too obvious a union of the two arts under discussion to be more than mentioned.

A further union of the two arts was dramatically illustrated this past summer. In the spring, the Mayor appointed a committee on Young Peoples' Film Festivals, chaired by Dr. E. G. Bernard, Director of BAVI. Also on the committee were representatives of Fordham University, the Mayor's Cultural Affairs Committee, the Motion Picture Association and the Hollywood Museum. A full report on the First Young Peoples' Film Festival held in July at Brooklyn College is the subject of another panel today. Suffice it to say that five prize-winning films, selected by students in Motion Picture Appreciation classes in the high schools, were shown on five mornings to an audience composed of five outstanding students from each of the public, private and parochial schools in the city, along with, wherever possible, a teacher from each school. Each afternoon a producer, director or actor connected with the morning's film addressed the youngsters. They, in turn, were questioned first by a panel of young people, different each day, and then by the audience at large. Neither rain nor ferry strike deterred these seven hundred young residents from the five boroughs from coming regularly. Their questions indicated a mature acumen and a deep introspection that could not help but carry over into their school work or be a result of it. They were assuredly one of the most mature audiences of which I have ever been a part.

All of the activities mentioned so far have required that a student leave his neighborhood, pay money for carfare and/or his ticket and attend the performance, more frequently than not, on his own leisure time. Some students are ready to do this because of environmental or other causes. The vast majority, however, need a catalyst before the mental explosion occurs that propels them into a theatre. Here BAVI has supplied that agent in various ways. Six years ago, Miss Helen Menken, head of the American Theatre Wing School, offered to prepare her students in condensations of classical and modern plays, with and without music, fully costumed, to tour the schools at no expense, for several weeks in the spring. A touring schedule was set up and students in some forty secondary schools had their appetites whetted this way. For four years, until Miss Menken became ill, this project continued. The plays offered, by the way, were selected because they were listed in the language arts curricula of the junior and senior high schools. When the Phoenix Theatre was based on Second Avenue, it sent out several units (at a small fee) presenting excerpts of plays joined together through historical or other bonds. These, too, were selected because of their educational importance.

New York has among its theatrical producers a young man who believes that, if people are exposed to Shakespeare at no expense, they will be more inclined to take the chance. Mr. Joseph Papp has been presenting free Shakespeare in Central Park for many years. Five years ago he persuaded the Board of Estimate to appropriate a sizable amount of money so that he could tour the schools, presenting between seventy and eighty performances of Romeo and Juliet. The tour by his company is now an annual affair. School auditoria in the five boroughs are used for stands of from three to ten days and students from schools in the area are booked in. The audiences normally have been limited to students in grades 9 - 12 with some 7 and 8 SP's being added. This season, because A Midsummer Night's Dream is being presented, we are experimenting with audiences of fifth and sixth grade intellectually gifted children. It will be interesting to study their reactions and follow-up. Each year some 60,000 students, many typical of the groundlings who stood to see the original plays, and reacting just as lustily, attend these performances in the fall. They are then ready to trek up to Stratford, Connecticut, to become part of the 30 - 40 thousand students we send to the Student Programs there. Each year the student season has grown so that this year it will fill the theatre from early March to mid-June, will present three productions and will draw students from the eastern coast from Maine to Washington, D.C. Other areas than New York City have discovered the happy combination of the professional theatre and the language arts.

Until recently, most of the stress of the in-school performances has been on drama. Two years ago this was rectified when arrangements were made with us by Ballet Society for Miss Melissa Hayden and members of the New York City Ballet to tour schools in a dance-demonstration. They visited about thirty schools. Last year Mr. Edward Vilella and his aides joined Miss Hayden and together they were able to reach another forty schools. This experience not only inspired youngsters to write but they took to drawing as well. Our film production unit recorded one of Miss Hayden's performances and this half hour film will shortly be available, through our Loan Library, for showing in as many of our schools as are interested. We have also filmed a program that Asia Society has been sending into schools, at a small fee, showing the comparisons and contrasts of the dance steps of China, Japan and Korea. Last season, also, the Brooklyn Academy sent a modern dance unit touring schools for a fee. The Lincoln Center Fund has sent tours into schools by the Metropolitan Opera Studio Workshop and Juilliard music and dance students. Word of the interested and enthusiastic reception accorded touring performers has been getting around. Arrangements are presently being made for a well-known television and motion picture actor to tour high schools, at his own expense and request, in readings from Sandburg and Frost. What better way could there be to show youngsters the close relationship between the performing and language arts? Through all these various programs, it is hoped that a majority of our secondary school students will be reached and inspired to read, write and speak about their experiences and so gain more from their educations both for the present and the future.

If these teenagers had been exposed to theatrical experiences when they were in the elementary grades, they would have been more fully prepared to appreciate the banquet spread before them now. Up to a few years ago, the most exposure the younger children were given to anything approaching a theatrical experience was an often amateurist puppet or marionette show, a health clown or other such innocuous and uninspiring performance as part of an assembly program. However, within recent years, just as the designing of clothes and the writing of books for children have become a specialized art, so, too, has theatre for children. It is still in its infancy, so to speak, and is going through growing pains, but it is here to stay.

We, at BAVI, have realized this and have become actively involved in introducing as many young children as possible to good theatre as reasonably as possible. We believe with Pope that "as the twig is bent so is the tree inclined." If we wish to have future creators, performers and audiences for the performing arts, we must start training them early. We began several years ago by arranging for the producers of a modern musical for children to give performances on school time at very reduced rates. They were to assume all monetary risks in case it was not a successful venture. Fortunately, the schools were delighted with this co-curricular activity and it has been expanded each year. Our only connection now is to bring the productions to the attention of the schools. The program is set up half of the time at the 92 Street Y in Manhattan and the other half at the Brooklyn Academy. The Producers Association will give between 80 and 100 performances of their Preludes to Greatness Series of musicals based on the early lives of Jefferson, Lincoln, Edison and Franklin and of the Merry-Go-Rounders dance group in Dr. Fasolati's Dilemma (wherein a piece of music is written and performed for the students) and The Emperor's Nightingale. Lesson plans are sent to the schools in advance to help the teachers prepare the students for their theatre-going experience. You will notice that all the productions fit in with the school curriculum, including the Language Arts.

The next step is to get the child to attend theatre on his own time, whether escorted by a teacher or parent or unescorted. The Board of Education has a project called the All-Day Neighborhood Schools which gives a cultural enrichment program, by means of clubs, from 3 - 5 in the afternoon in areas where both parents are usually to work at these hours. They experimented in one school with the possibility of bringing theatre into the school on Saturday mornings for these children. It was so successful that they invited BAVI to come in on it about four years ago. Parents, volunteer citizens and school personnel work together in previewing and administering the program which this year will bring at least 125 performances to about 35 schools, most of which are not affiliated with All-Day Neighborhood Schools. Last year, with half as many schools and performances involved, about 27,000 children were exposed to a live theatrical experience (opera, ethnic dance, play, musical drama, pantomine, etc.) with the help of about 500 volunteers. Because producers are guaranteed at least ten performances, they are willing to cut their fees and the New York State Council on the Arts has given support for last season and this. Now that NDEA funds may be used for Language Arts, perhaps they can assist here, too. Because we strive to reach youngsters who are culturally underexposed, we keep the cost to a bare minimum so that schools can cover expenses. We also encourage the program in the outlying areas of the City to reach children who would not normally be brought to Manhattan because it is too far to travel.

The children are awakened to musical experiences through the tours by Young Audiences, (a touring concert program), which introduces them to the musical instruments and chamber music in their assembly programs and through concerts such as those by the Brooklyn Philharmonica, and the Choral Symphony Society. Sometimes some of them attend some of the operas or concerts to which the secondary students go.

Some parents' associations like to treat the children in the schools to special experiences, either at an assembly or after school. They, too, are hoping to help their youngsters with their work in language arts by introducing them to the performing arts. There are several ways in which we can help them select the best productions to bring to their schools. We keep a list of worthwhile productions, developed by previewing as many performances for children as possible. We have many parents helping with this previewing by filling out questionnaires about shows they have seen. These may have been at one of the centers where different performances are given each week-end, like Town Hall, the 92 Street Y or Brooklyn Academy, or at one of the theatres where a play runs on week-ends for a season. Sometimes, producers, anxious to have their work seen, will set up a special showcase, or we will be invited to a school at which a performance is being given. High school and college drama groups sometimes are interested in playing for the younger students and need to be previewed before their offers, often to appear at no cost, may be accepted. Sometimes members of the PTA wish to perform, but they, too, should be judged by competent previewers before being permitted to appear in the school.

There is an organization that is a sub-division of the American Education Theatre Association, called Children's Theatre Conference. We, in New York State, are part of Region 14 of this national institution which is striving to improve the calibre of plays shown to children. Every spring, Children's Theatre Conference, Region 14, presents a two-day showcase during which half hour segments of the dozen or so outstanding productions for children seen by previewers that winter are shown. Hundreds of sponsors (parents and educators) come from all over our state, New Jersey and eastern Pennsylvania to get ideas about good shows (plays with or without music, dance productions, pantominists, puppets, etc.) which they can bring to their schools.

We have also been working with the Advisory Council on Children's Theatre, which includes ANTA, the New York State Library Association, several colleges and other public school groups. It is trying to improve the status of theatre for children as well as to help establish a permanent theatre where outstanding and educationally worthwhile experiences in the performing arts will be presented just for the six to twelve year old. These would be more elaborate productions than those which tour the schools and a trip here, either on school time or over the week-end would be a final step before the child attends a performance as part of an adult audience.

Of course, this first concert, play, musical comedy or dance program to which the child is finally taken, should be carefully chosen to be sure it is appropriate to his age and interest span. Assuredly, much of it may be above his understanding but the value of just sharing the experience with the older members of the family and later talking about it with friends and schoolmates is inestimable. His imagination will be stimulated and, even better, as a sign in our subways states, "An evening in the theatre is a lifetime of memory."

ORGANIZING STUDENT TV SQUADS

Jay M. Brill, Plainedge

As television manager of the Plainedge Public School System, I am responsible for the production and direction of the instructional television programs originating in our studio. Dalton Levy as the district Audiovisual Director is my supervisor.

Many of you are already familiar with the Plainedge television project and the role the State Education Department has played in its expansion and development. Ray Graf, Bill Humphry and others working in the Division of Communication have given freely of their time, talent and energies and have truly helped to upgrade the television operation.

The Plainedge Public School System is in Bethpage, New York, and is comprised of six elementary schools, two junior high schools, and a high school. In addition to these schools, the central administration building receives all telecasts.

Last year (1963-64), we telecast over 400 segments of instructional television. We aired Spanish and Modern Math to the elementary schools and science to the high school. In addition, we had a weekly enrichment series in the high school that was seen on a voluntary basis by the English classes.

This school year (1964-65), we are continuing with the elementary level Spanish and math, and have expanded the concept of the high school program so that it now reaches all of the departments and subject areas at least some of the time. This program, entitled, Let's Live, presents outstanding guests who perform their talents or who are interviewed by teachers and students. The program is aired on Fridays and is available to all teachers throughout the school day.

The studio is located on the second floor of the high school, and is separated from the control room by a walled-in glass partition. The studio equipment includes two Sarkes Tarzian cameras on hydraulic pedestals, an assortment of lights, microphones, microphone stands and a microphone boom. The control room houses our third camera (film chain); filmstrip projector and 16mm projector; console for taking, fading and superimposing pictures; audio panel for sound selection; and the videotape machine.

At Plainedge, we transmit our signal to the schools via the new 2500 mc transmission system. You may recall that it was at Plainedge that the FCC experimented with this transmission system, As a result of the successful operation the FCC has allocated the 2500-2690 mc band for instructional purposes under the name, Instructional Fixed Service for Educators.

I hope this sounds like the energetic project it is. The factor that allows us to operate and to achieve the degree of success we have attained is to be found in our ambitious, highly skilled, and energetic student television squad. This squad is made up of boys and girls, who are trained in studio and control room operations (technical and non-technical). This group of high school students is necessary for the functioning of our district operated television project.

Before I present a visual account of the tasks they are asked to complete, I will outline the procedure we use for selecting these youngsters.

1. **Bulletin boards are set-up around the school to show other students working on the various pieces of equipment and to spell out the what, why and how of the television project.**
2. **Announcements are read in each home room (official room), asking for volunteers for the squad and giving the same information which is found on the bulletin boards. The announcement states that students must have passed all subjects on their previous report card; have an assigned study hall period available throughout the week; or desire to eat a quick lunch and report to the studio immediately after eating.**
3. **The interested applicants are directed to the audiovisual office, where the secretary lists their names, and sends the applications to the guidance office for their approval.**
4. **The students are then notified of their rejection or acceptance. If accepted, their official program is changed to read AV-TV in place of the original class assignment.**
5. **We issue armbands to students who are accepted, and these serve as passes and help to identify the squad members when teachers need help with any audio visual equipment. The armbands also serve to give the members a sense of importance in belonging to an exciting and important school organization.**

The following slides will give you an idea of the tasks the squad members carry out and the equipment they are asked to work with.

Slides

A. Studio

1. **camera operator**
2. **floor manager**
3. **boom operator**
4. **setting lights**
5. **setting clocks**
6. **operating light panel**

B. Control Room

1. **console operator (video)**
2. **console operator (audio)**
3. **video tape operator**
4. **cleaning video tape machine**
5. **erasing tapes**
6. **storage of tapes**
7. **making audio tapes and recording music**
8. **operating slide projector**
9. **operating film projector**

C. Art Work

1. cutting out pictures
2. working on resource file
3. using the opaque projector
4. lettering with various materials
5. preparing models and dioramas

D. Repair Work

1. repairing tv sets
2. repairing antenna cords
3. repairing classroom antenna connector boxes
4. building backdrops and sets

E. Secretarial Work

1. collating worksheets for studio teachers
2. tabulating evaluation forms
3. grading exams
4. aiding secretaries

All of these skills have to be taught to the squad members. When we first started to train a staff, it took the better part of three weeks to train the various crews and to familiarize the students with the equipment. Often, and especially with our new equipment, I was able to keep one or two days ahead of them. I'd learn how to operate a piece of equipment, and then would instruct the students.

At the present time, I rely heavily on the experienced members to teach the new members. This technique has proved to be successful and it allows me greater freedom during the first few weeks of the year. In addition, I have prepared several training tapes that are used in the studio and control room for training the crews. These tapes allow the students to practice repetitive operations while they take direction from the tapes.

In the hectic world that takes over when production begins, great demands are made upon the students, and invariably they come through with good work. After the program ends and the tension subsides, they are a busy, happy group in the studio at Plainedge. Everyone concerned with the project knows that the squad members are as important to the success of the television project as is anyone else on the project. There would be no Plainedge project if not for the AV-TV squad.

THE AUDIOVISUAL ASPECT OF THE READING PHASE IN THE FOREIGN LANGUAGE PROGRAM

Ruth Cornfield, University of Pennsylvania

The audio and visual aspects of language teaching begin from the first day that our students come into our room and long before we show them the printed word. We must make them aware of the sound of the language and the meaning of what they hear before we can put the printed word in their hand. If it is our hope to produce students who can read the foreign language we must build up concepts of sight and sound so that meaning will come directly through the foreign language and not through its English translation.

Audio and visual materials are among the best tools a teacher has for the instruction of foreign languages. Our constant problem is comprehension. Do our students understand what they are hearing, what we are saying to them, what they are saying to us, what they are reading?

With enough drill, with the proper use of audio materials in the classroom, in the language laboratory we can be very successful with speech production, we can be very successful with getting our students to produce sounds. In fact we can get them to pronounce whole paragraphs with a high degree of accuracy. However, it is often with dismay that we realize that they can produce these sounds without knowing what they are talking about. They can even answer questions correctly and not know what they are talking about.

I like to tell this anecdote because it happened to me. It set me back on my heels and gave me something to think about. I was teaching a class of eight year olds at the Language Institute at Hunter College one summer. This was their first experience with any foreign language, I began to teach them the usual short sentences and phrases by pointing to the things around the classroom and saying "Voici la table, voici la chaise, voici le plancher, etc." We drilled and drilled and they imitated every sound, every intonation perfectly. In the ensuing days we proceeded to the questions "Ou est la table? Ou est la chaise? Ou est le planche?" and the answers were given correctly each time. One day, just for variety, I asked my students to go over to the objects as they answered and show me la table, la chaise, etc. I called upon one little girl and asked "Ou est le plancher?" Without hesitation this little one came forward to where I stood reproduced the sounds of the answer perfectly "Voici le plancher but instead of touching the floor she bent down and touched both my shoes. I was astounded and dismayed. I had asked the question about "le plancher" innumerable times during the past weeks. I had received the right answer, given with perfect vowel and consonant sounds, in the right intonation and I assumed that perfect speech production meant perfect understanding. I had not thought to check until that day. The misunderstanding arose because when I taught "le plancher" I had pointed down to the floor and my student thought I was pointing down to my shoes

From that day on I am never content with the answer alone. Something must accompany the answer to prove to me that there is understanding as well. Here is where the well-chosen visual provides us with the perfect tool. It is a vehicle through which we can teach meaning directly in the foreign language. Without it we lean heavily upon questions and answers. Our students learn very soon how to answer questions by resorting to a kind of verbal ping-pong where they give us answers to our questions but we are never sure that they really understand what they are saying.

"Is John's father behind the house?"
"Yes, John's father is behind the house?"

"Is the book red?"
"Yes, the book is red?"

Do they really know what the phrase "behind the house" means? Do they really know which color is red? We can take nothing for granted. A well-chosen visual will help to be sure that our students do understand.

"Point to red. Show me where John's father is. What else is behind the house?" Such questions and directions show us whether the student understands what we are saying, what he is saying without once using any form of translation.

Visuals, also help the student build up authentic concepts about the land and the people whose language he is studying. No matter how well organized his words are, if he does not have authentic concepts the language he hears and uses may have very little meaning. For instance, if the words for breakfast in French, "le petit dejeuner," mean orange juice, scrambled eggs and bacon, marmalade and toast and hot, fragrant coffee to my student, he has no idea of the true meaning of the French words. If, however, we show a French breakfast of hot chocolate and croissants as we teach the word "le petit dejeuner" my student gets meaning and is beginning to build up concepts of how French people begin their day. The visuals we show must depict authentic scenes, must give our student the atmosphere, the climate in which the language he is studying grows.

Properly designed audio and visual materials become an intrinsic part of the program through which one teaches. The student's linguistic processes are developed through correlating language to the visuals. This kind of training carries him through the audio-lingual phases of language learning to the point when he starts reading the material he has heard and practiced speaking. He will read directly in the foreign language since he understands what he sees printed before him. He will not need to resort to translation, the page in front of him is meaningful.

I have chosen to show you today materials which have been designed to carry out the ideas I have been discussing. They run the gamut of programs for the elementary school, the junior high school, the senior high school as well as for the language laboratory. In all of these materials the idiom is built into the design of both audio and visual and meaning comes through the correlation of both. You will notice that the visuals are all authentic and can serve for discussions on the culture and civilization of France in the case of the French materials and Spain or Mexico in the case of the materials in Spanish.

(Materials which were shown were from Teaching Audials and Visual, Inc.)

JE VAIS A PARIS - a song-game-lesson in French.

EN LA ESCUELA - a unit from the series of "Spanish for Beginners."

LA CIUDAD - an aural comprehension exercise with visuals in Spanish.

KEYS TO PRONUNCIATION AND THE WRITTEN WORD - a programed course in French pronunciation on tape.

EFFECTIVE COMMUNICATIONS MEDIA IN SECONDARY SCHOOL ENGLISH

Ruth Nelson, Hewlett

My subject is articulation in the subject field of English. A tall, order, certainly no one fool-proof method to offer you to take home to your various schools, but perhaps a chance to think out with you various successful ways for us to inspire and communicate with our students so that they find an excitement, a joy, in expressing themselves in their native language.

Way back in the prehistoric audiovisual days before the War II, I discovered step by step and through many a fumble the teaching power of a class movie, music records, stuffed birds for third grade science classes, folk costumes for fifth grade social science classes. And on and on.

Forgive this detail of autobiography, but there is a point to it. After years of fighting for visuals, employing visuals, even personally buying audiovisual materials, I realize that this vital teaching area has reached a new plateau. Instead of worrying if a movie will ever be made of color in motion, we teachers now must decide which color-motion movie will really be of greatest help to our teaching aims. So that instead of fighting on the front lines for an audiovisual department, concerned teachers now can afford to assume the role of "selector."

I certainly will not attempt to claim that all of my experiments with various media have been successful. Instead, perhaps it would be most profitable to tell you specifically about some of the efforts that seemed to have worked for me this past year or two. To be more specific, I am going to discuss these projects in four kinds of English classes: a senior English class, a senior creative writing class, a slow learning sophomore class, and a team teaching experimental group.

Teaching mechanics of grammar and punctuation in senior English level is quite a challenge. Those students who have wanted to learn, have learned skills; those who have had difficulties, have often chosen to ignore skills. Problem. How to encourage a basic standard. I decided to aim for correcting ten common writing errors, and each student would keep a grid sheet (mimeoed) noting his scores for the eight or ten themes due for that six week period. Private conferences could then help explain these problems.

But the difficulty. I wanted to review the ten errors in a first day of the year kind of lecture.

Did you ever think how to make an interesting lecture on ten basic punctuation rules? It was a challenge. First was to get attention. Therefore, I began the session by asking them to relax and hear a record, John and Marcia.

This did stir them from apathy! Now to get the punctuation rules going. I first had to explain the difference between oral and written communication. Here, the overhead proved invaluable. How would John and Marcia communicate on paper? Could anything go?

With the lecture well under way, I could move into specific rules: Overlay methods on such items as compound sentences, subordinate clauses and the semicolon overlays.

All were, I thought, pretty effective teaching devices. Other rules were explained in like manner. The lecture ended with a reverse switch. How would one communicate orally-with a written form of communication? After a few minutes of questions and answers on this problem, I ended the lecture with the delightful punctuation record of Victor Borge.

Were the aural-visual devices a success? Yes. But only after six weeks of pragmatic study of these errors and a fifteen minute final review of these overlays at the end of the six-week period. Frankly, the second lecture was essential. The original lecture could have been "gimicky" without the follow-up drill, a recapitulation.

The overhead is invaluable to my composition classes. At senior level, expository outlines and conclusion are stressed. For each major paper(be it on Hamlet, Utopia, the Lake poets)final approval of the outline must be made from class discussion and the proposed outline corrected at that time.

For example, here is a before-after study that can be made in a class at the outline level. Seeing the two outlines can, of course, stimulate an exciting class discussion.

Often a student's corrected paragraph from a private conference is reproduced alongside his rewrite, and perhaps even challenges those corrections. All this can trigger a class into a concern, an involvement.

Now, to other devices: the bulletin board. I found out the hard way that it is of no use if the students themselves are not involved. This particular display was most effective: We were studying modern American poetry. Through class discussions, we listed those poets whom we had "met" through out texts, magazines, newspapers, etc. After listing names on the bulletin boards, we culled the most important for our first display.

Then, as each student studied one particular poet, he wrote a report why a specific poem was a success to him. Only after he had explained the poem was he permitted to add the poem to the display. Eventually, the bulletin board became a tribute to a stimulating study of American poetry. Each student in the class knew every fresh poem added. The board was not a room decoration. It was a Bronze Star of a group of students aware of the strong American poets.

Now, to move quickly. How can an English teacher vitalize a piece of literature? The reading is the important aim. But the comprehension determines the success. The multi-media approach will always encourage the instructor to explore various areas. To save time, let me illustrate with two literary forms: First, let us say "What can the English teacher do to stimulate concern about a book? A classic? Why and how can it retain blood and heart beat?" Then any exploration of its stimulus must involve as many sense perceptions as can be recognized.

For example, let's explore Huckleberry Finn. What kind of class discussion can begin this unit when we flash the following overhead? Or explain with a man the horrifying truth that the Mississippi River goes on South of the Ohio, and there is no way of turning back? Or let a student show, as was done with stocking puppets, why in isolation of moral principles of the land

Jim and Huck could determine their values. So much so that Huck could cry out, "All right. I'll go to Hell." Let me tell you, those puppets, one black button-eyed stocking and one white button-eyed stocking, were real. When our eyes were upon them, so were our minds and our own moral decisions.

Then what kind of fellow could write this kind of novel? Was he too far away from our world to communicate an American humor? A timeless awareness of the flaws in our special culture? Here a record helped introduce the voice of the novelist, and, thanks to Hal Halbrooke, he became the real voice.

Or, on film his world became a world we could contact. The river towns became our world of characters in the special McGraw-Hill film of Mark Twain's World.

And in one assignment of personal expression, several chose to collate an impression rather than write some kind of routine report. The results were exciting and provided a bulletin board display that attracted many students and teachers of other classes.

The same approach with a play is equally as exciting. Let's try the standard senior English play - Hamlet. Of course, this current season Richard Burton is our contact man. We are using this year the Burton recording of the play. Several of my students saw the Broadway production last spring, and also the movie televised show this fall. I also make use of parts of the EBF films of Maynard Mack.

For other sources, I used the biology department for the ear poisoning of the king and the skull in proper lighting for the grave differs' speech. Just because it has become such a local "chic topic"this year, one of my girls and her mother gave to the class a lecture on the particular "wild" flowers involved with Ophelia's mad scene.

When we discussed the play within the play and the court reception, one of my students, an excellent ballet dancer, decided that we needed to know more about Elizabethan court dancing. She arrived the next day in leotards! It didn't seem quite Elizabethan, but we did learn about Hamlet and Ophelia and dancing. Then the class profited by a magnificent mural from a promising art major. Also this time we used TV for a different interpretation and discussion by Christopher Plummer and the BBC.

Now, to move on quickly to the second segment: Creative writing Oh, what a vast and wonderful world! Here, the students are geared to explore every media - every approach to communication. Let me list a few of our many explorations: First, the mimeo machine is vital. Every Monday morning they receive from me the weekly bulletin of all the best sentences, paragraphs, ideas of the week. All the good parts signed by the authors, of course. There is also offered a problem of the week or criticism of an anonymous passage.

Also, the mimeograph serves the students to help explain their problems. Here on overlays is a typical exploration of a final poem which in reality was done on mimeograph and used as a work sheet for the poet and his colleagues.

Another approach to poetry came about because of our American Field

Service student of last year - a Japanese girl. She graciously lectured to an art class and our creative writing class. First, on the theories of Japanese flower arrangement. After she had attempted that philosophic chore, she talked to us about the qualifications of the Japanese poetry called Haiku. After philosophy and art arrangement of space, we were ready to list rules and talk about haiku verse.

Many of the ensuing poems were exciting and self revealing. The art class members at the same time began to express themselves in pen and brush. Then we combined efforts and made a display in our front hall that truly stopped traffic. We combined the poems and the paintings in an area of about 25 feet long. Each poem with its suitable drawing was mounted on a 3' by 2' black matting. It was impressive. Later the local library borrowed the show for a two-week display.

Another media I continually use in creative writing is the experimental film. I use it, so far, in two ways:

First, as free writing. For example, a few weeks ago we saw without title and credits Contemporary's film "The Sky." Some worked in poetry.

Another kind of movie I have employed is the essay type. One of the most successful was the line drawing cartoon film of Thurber's "My Financial Career."

Also effective are the fairy tale variety, that provide a sophisticated comment on our culture such as Little Yellow or Munro. As the result of the fairy tale films, we listened to the adult so-called child stories of such men as Sandburg and Oscar Wilde. We heard Sandburg tell "Rutabaga Stories." Then the more sophisticated fairy tales of Oscar Wilde. (TAPE) The results were better than good. Some of my most so-called mature seniors came through with miraculous fantasies. One imaginative girl made her own illustrations and signed her own book for her tale about "A Seafull and a Lonely Princess."

We then (through my Future Teachers of America Group) looked at a collection of first graders' art efforts. Each creative writer chose one first grade drawing and wrote a fairy tale or fantasy on that drawing.

The next outdoes the story of any Greek relay event. My so-called "regular" English classes were studying Greece. The unit inspired some music and art projects. The creative writing class was studying the sonnet form. The students, seeing the room full of Greek references, suggest that they try a sonnet with a Greek allusion.

The class also became involved, while working on the short story form, with ghost stories and science fiction stories. Here was a time when the stimulant was all audio, not visual. Fortunate enough to know Basil Davenport, an editor of innumberable ghost anthologies and a delightful story teller, I invited him to my home one night - right at Halloween. The creative writing students came. We turned out the lights after we had set up a mike, and recorded, leaned back, and heard wild and eerie tales to our - Hitchcock, Hitchcock!

After writing new plot outlines and rehearing Mr. Davenport on tape, the students, were given a class day to write on their "far out" stories. By accident, the year before I had stumbled on an idea so tried it again, and it worked! I put on electronic taped music records while they wrote.

Another aid which has tied in with this area is our notebook of strange newspaper stories. The students bring in clippings and also use the notebook as an idea source. One of the best poems this season came from a news article about all the planets going one direction and Venus spinning the wrong direction. Marvelous opportunity for a comment!

In finding some kind of sound magic as a line between good poetry and good prose, I use Dylan Thomas records, a rare man whose every phrase made music. As we study him, I make use of the film "A Child's Christmas in Wales" as well as the record. In almost a deliberate attempt of imitation after repeated listenings, we do get some good results. One was a Memory of a Child's Day in their own life. Time does not permit me to read you examples. They are not only phonetic and good writing; they are powerful!

Descriptions of classmates, descriptions of rooms, an awareness of sights and smells through trips to the bio classes, the lunchroom - all make for better writers.

What I think works particularly well is a many-sided approach to a writing assignment. Let me illustrate. We have a superior and exciting art teacher in our school. She has been making movies for quite some time and well earned herself a grant at NYU last summer, The Willson Award. One technique she has tried is photographing an endless amount of overlays to make a three to five minute film. She did a fantastic job last year in this media based on Poe's idea in the "Tell Tale Heart."

Now, where from here? My creative writing students could easily consider this media below their "dignity" of great creation. We were in luck. Right in the neighborhood lives a Mr. Stan Lee, the script writer for Marvel Comics. Not until I spoke to him did I discover what has replaced "Peanuts" with the college kids. Just as Harvard had old Humphrey Bogart Film Festivals a few years ago, now it is Marvel Comics - Harvard, Bard, Colgate, Columbia, Chicago U - all have fan clubs for Marvel Comics. Mr. Lee spends hours traveling on request to campuses. Obviously, the whole trend is tied up in satire and in pop art.

Mr. Lee came to our class. Next day, our art teacher, Miss Peterson, gave us a talk on "pop art." My future writers became quite heated about the whole thing. This knowledge of art plus Mr. Lee's lecture. Was the venture successful? We do not know. But at the moment we are busy writing possible scripts. The art department is creating cartoon overlays. I'll tell you in the spring if this venture really culminated in an over expression of creativity.

To wrap up the creative writing ventures: two aids are essential: Both concern the chance of the child to be seen in print. Two contest areas have proved of help to us - Scholastic and Atlantic Monthly Writing Awards. We've made both teams and think that they offer a worthwhile incentive. The other is our Creative Writing magazine. The amount of labor is unbelievable. Every page of drawing is original. The typing is a product of our business department. The slides cannot really indicate the love and labor involved.

Now on to the slow learner at the sophomore level. I have no chance to explain the plan at this time, except to say that your Audiovisual magazine a few years ago wrote up the experiment. I still swear by the approach. It is a teaching plan that proves the invaluable aid of the audiovisual department in a secondary public school. It is so exciting that I am planning a re-tabulation of the experiment and hope to show some final results on the students who were involved. So far, the findings have been thrilling.

Now to the last segment, team teaching. Here the film can tell you all that I want to say.

(13 minute film: "The Cross Media Approach to the Greek Unit in Team Teaching")

Thank you for the exciting stimulus and vitality your division of instruction has brought to the secondary school. You have helped make the English department one that the student can relate to his total world of communication.

FOLK DANCES REPRESENTED ON POSTAGE STAMPS: A NEW APPROACH TO VISUAL EDUCATION

Susan Braun, Dance Films

Tom Morgan, editor of the Philatelic Magazine, states, "The modern postage stamp has come a long way since introduction over 150 years ago. Originally a simple label in prepayment for a fee to carry a letter, the stamp has become a channel for publicity, propaganda and nationalism. The multitude of issues all over the world carry pictures illustrating flaura and fauna, the arts, geography, history and every conceivable subject thought up by the designers and postal authorities."

Because of the wide variety of subjects depicted on postage stamps students will surely find stamps suitable to illustrate topics given them by their teachers for the purpose of writing a paper.

SPECIFICATIONS OF CONTENT AREA OF POSTAGE STAMPS IN CONNECTION WITH THE CURRICULUM

In Linn's Weekly Stamp News, November 23, 1964, an article about Parkland Junior High School in Louisville, Kentucky, tells of a plan to use postage stamps from the United States and foreign countries as a medium for teaching English, Social Studies and History. The article mentions that "this in itself is not new, for it has been attempted before, with high level students. What is new is that stamps are now being used to instruct students from very low income groups. Some boys and girls are also limited by environmental and mental opportunity. A hobby to them was something for only the rich."

Mr. J. S. Harriman, a teacher of Social Studies and English is the instigator of this plan. He has established a Stamp Club in the school and has written to the Bern, Switzerland, Board of Education to obtain names of teachers of English. He wants to establish a Stamp Pen Pal exchange system within the two school systems.

In the December, 1964, issue of The Science Teacher, Victor Showalter, Science teacher of The Ohio State University, Columbus, Ohio, wrote an article titled, "Reflections of Scientists' Public Image." Mr. Showalter says, "Scientists have been commemorated on stamps by nearly all major nations in the world.. ....no one has determined the impact a stamp has on public scientific literacy. It may be slight. Yet the very fact that it is official and public recognition of achievement may contribute substantially to a nation's scientific self-image." Mr. Showalter suggests that Science Clubs collect and exhibit postage stamps pertinent to the subject.

Because of my interest in dance and my affiliations (I am President of Dance Films, Inc., a non-profit, tax-exempt membership organization, and a member of other dance, stamp, and film groups) my approach to visual education is through folk dance and primitive dance on which some folk dance is based. I believe that folk and primitive dance may be used to introduce some of the subjects taught in educational institutions.

Health Education can be introduced by talking about the Witch Doctor. Angela issued a stamp portraying a Witch Doctor. The American Indians have their Medicine Men; we have our Doctors. Folk dancing and nutrition are included in Health

Education. There are stamps of Doctors, medical milestones, folk dance and foods.

Studying a country's history comes under social studies. Most of the important events are depicted on postage stamps. For example, Holland ruled Indonesia, then Dutch Indies, from 1938 to 1945. At that time a set of stamps was issued of folk dancers from some of the islands making up this country. It includes "War Dancer of Nias Island," Legong Dancer of Bali," "Wajang Dancer from Java," "Padjoge Dancer from Southern Celebes," and "Dayak Dancer from Borneo." Before acquiring its independence from Holland, Indonesia issued stamps including "Manari Dancer from Amboina." During the Dutch Rule stamps were issued of Queen Wilhelmina and Queen Juliana, the Dutch Indies medical college, temples of worship, etc. On November 28, 1949, Holland transferred its sovereignty to the Republic of Indonesia, except for the western part of Borneo. The Republic of Indonesia was proclaimed August 15, 1950. Folk dance stamps issued during this period include "A Dancer in Front of a Gate" (commemorating the 20th Anniversary of the fouding of Jogokota), "A Javanese Dancer," and "Dancer With a Parasol." Other stamps available include one of the President of the Republic, proclamation of Independence and voters.

In making a study of the United Nations students will learn that some countries belonging to this organization have sent and are continuing to send dance groups on tours to promote a better understanding among countries.

Russia sent several folk dance and ballet companies, including the State Ensemble of Folk Dance (Moiseyev Folk Dancers directed Igor Moiseyev) to the United States. In 1962 Russia issued a stamp to commemorate the 25th anniversary of the State Ensemble of Folk Dance.

In honor of the fourth world tour of the Bayanihan Philippine Dancers (1963) a set of four stamps, showing scenes from their repetoire, were issued by the Philippine Government. The scenes shown were from "Tinikling," "Pandanggo Sa Illaw," "Itik-Itik," and "Singkil."

Several United Nation countries have sent dancers to perform at the New York World's Fair (1964 - 1965). Some of these countries have issued special World's Fair stamps. Spain issued a set including one her greatest dancers, the late Argentinita. King Myambutsa IV of Burundi gave permission for his own dancers and drummers to perform at the Fair. There were twelve Ntore "Warrior" dancers, better known as Watusi, and ten drummers. Burundi issued a set of seven World's Fair stamps - three dancers, three drummers, and the assistance to the Chief.

Music appreciation and the study of musical instruments can be introduced through stamps showing folk dancers accompanied by musicians. For example, Russia issued several folk dance stamps showing folk dancers being accompanied by a balalaika.

Costume design can be introduced by looking at the costumes worn by folk dancers of many countries. Foreign language can be introduced by looking at the written material on the folk dance stamps.

The study of art appreciation can be introduced by looking at folk dance stamps and studying the relationship of color and design. For example, the head of the dragon, on a stamp issued by Manchuke, leads into the dancers. The dancers and dragon are placed within a square. The writing is placed in two oblong shapes, and on either side of the dancers and dragon. The stamp was issued in 1940 to commemorate the 2600 anniversary of the birth of the Japanese Republic. Another stamp issued by Manchuke in September 15, 1962, to commemorate the 10th anniversary of the founding of that country, portrays "Women of Five Races Dancing." The dancers are in line formation, within a given area. Writing is placed above and below the dancers as well as to each side. The stamps denomination is outside this area. In each case only one color is used, for the dragon dance stamp, blue on white paper; for the women dancing, green on white paper.

POSTAGE STAMPS AS AN AID IN ESTABLISHING GOOD WORKING HABITS

Not only can postage stamps serve as background materials for art appreciation, they also can be used very effectively in fostering good working habits. Students will learn how to do research when assigned a topic for writing a paper.

Students may use 8 1/2" by 11," white, unlined loose leaf sheets to mount their stamps and write information on. The stamps should be mounted with stamp hinges. The paper and information on the stamp design should be typed neatly on the loose-leaf sheets, in a manner pleasing to the eye.

A certain amount of research on the stamp design may be obtained from stamp catalogs. For greater detail, books on the subject, the encyclopedia, and a specialist in the field may be consulted.

On the whole topical collecting is for everybody's pocketbook.

HOW TO FIND OUT ABOUT POSTAGE STAMPS

To find needed postage stamps stamp catalogs by Scott and/or Minkus should be consulted. These catalogs, issued yearly, may be purchased or may be looked at in public libraries. They list stamps under countries, and give date of stamp issue, and other such information. Scott also issues a monthly magazine (by subscription) containing articles of philatelic value and lists current stamps under country and topic. Other stamp magazines such as Stamps are available by subscription and on the news stand, stamp newspapers such as Linn's Weekly Stamp News are available on a subscription basis. Newspapers, including the New York Times and the New York Herald Tribune, feature articles and columns on postage stamps by stamp editors. Stamp newspapers, magazines and regular newspapers also include ads of stamp dealers, notices of new stamps, and notices of stamp club meetings.

Joining a stamp club or a unit of a stamp club is another way of finding out about postage stamps. The American Topical Association offers various services to its members. They include a free translation service for members receiving mail from abroad about stamps, a membership directory including names of members (under the topic they collect) and their addresses; slide rental and stamp purchase departments. They publish a magazine featuring articles of philatelic value, checklists of stamps, and ads of stamp dealers and handbooks on certain topical stamps, for a small fee.

The Fine Arts Unit of the American Topical Association issues a magazine called The Fine Arts Philatelist. They have just issued a check list of dance stamps.

HOW AND WHERE TO GET POSTAGE STAMPS

By joining a stamp club like the American Topical Association, or one of its units, students may trade and purchase stamps from fellow members. Some stamp dealers are members of these clubs and bring their stamps for purchase. By going to stamp stores or stamp departments in certain department stores (Gimbels in New York City) armed with catalog numbers of stamps and countries issuing them, students may purchase stamps. Students may also write to stamp dealers advertising in aforementioned publications telling them the topic they collect, whether they want mint or canceled stamps, and giving catalog number. Some dealers will send stamps on approval. The student would pay for stamps kept sending back ones not needed.

SUMMARY

Folk dance and primitive dance on which some folk dance is based, can serve as an introduction to some of the subjects taught in educational institutions. Postage stamps of folk and primitive dance and other subjects relative to the curriculum, can be used as illustrative material for papers students must write. Mounting stamps and typing written material on stamp design can help students establish good working habits, a sense of aesthetics, and an ability to do research.

MOBILE REAR PROJECTION: HOW IT CAN BENEFIT STUDENTS IN CLASSROOM, SMALL GROUP AND INDIVIDUAL INSTRUCTION AREAS

David D. Schwartz, H. Wilson Corporation

At last year's Convocation, a presentation titled "State Film Utilizations Survey - Plans for Improved Distribution and Use" emphasized the importance of film education in New York State classrooms. According to that presentation, for the school year 1962-1963, the school districts of New York State owned motion picture equipment valued at nearly twelve million dollars. New York State teachers had access to almost ten thousand projectors and aside from seventy thousand films owned by the school districts of the State, there were two hundred thousand rented films and one hundred forty thousand free films available. (1)

A conclusion of that presentation was "The logistics by which these films and projectors are brought together at the correct time in classrooms greatly affect film utilization as an additional learning resource available to the students of New York State." (2)

ISSUE

Can mobile rear-projection serve as a practical vehicle for bringing available projectors and films into every classroom, small group and individual learning area, at the precise moment they are needed?

Light Control - One Major Obstacle

Adequate light control is a necessary consideration for general classroom activities but the introduction of motion picture projection precipitates the need for special room darkening devices.

Although many classrooms are equiped with special facilities, many have not yet been able to afford them in every classroom.

An Economical Approach - Not a Panacea

The cities of Milwaukee, Toledo and Memphis were faced with the problem of making available film programs accessible to their students in every classroom. These cities had a sizeable inventory of projectors and films but utilization was inhibited because of the room darkening problem.

The possibility of equiping every room with special darkening facilities, at one time, was economically impossible.

How then could they give their students the benefits of available projectors and films in every classroom - TODAY?

Each of these cities have placed hundreds of mobile rear projection units in their schools to complement a long range darkening program. These RP units will accept the schools existing projectors and can be wheeled into any daylit classroom or other learning area, effecting a satisfactory picture result. The units are compact and have light shield devices which prevent the ambient light from washing out the picture.

The cost of one RP unit is approximately the same as the cost of room-darkening devices for one classroom.

Decrease Teacher Frustration, Increase Utilization = Students Benefit

The implementation of mobile rear projection has effected a substantial increase in utilization of existing projectors and films in their schools.

Film education is now possible in any learning area and teacher frustration has been minimized regarding film education as a part of their teaching program.

Of course, their students are benefiting today rather than having to wait for the completion of a room-darkening program.

An Actual Demonstration

An actual demonstration of an RP unit will give us an opportunity to identify the features of this vehicle which can make film education accessible to the student in small group and individual learning areas, as well as in his classroom.

> (A WILSON MOVIE-MOVER RP (MOBILE REAR PROJECTION UNIT) IS WHEELED INTO THE CONFERENCE ROOM. POSITIONED ON THE UNIT IS A 16MM PROJECTOR WHICH HAS THE FILM PRETHREADED. THE UNIT IS PLACED DIAGONALLY IN THE CORNER OF THE ROOM. MR. SCHWARTZ PLUGS THE PROJECTOR INTO A WALL OUTLET, WALKS BACK TO HIS SPEAKING POSITION AND ACTIVATES THE PROJECTOR VIA A REMOTE CONTROL SWITCH. A FILM PROGRAM COMMENCES AND RUNS APPROXIMATELY 30 SECONDS. MR. SCHWARTZ THEN SHUTS OFF THE PROJECTOR VIA THE REMOTE CONTROL SWITCH).

Demonstrated benefits of mobile rear projection include the following points:

> Films can be viewed in any daylit (undarkened) learning area. An RP has easy mobility and this fact coupled with using the schools existing projector spells practical economy.
>
> No valuable learning time is wasted moving individuals to a special viewing room.
>
> Student remains in his normal learning environment.
>
> Student can take notes while viewing films in an undarkened room.

A teacher can maintain visual contact with students and utilize supplementary teaching materials. The film program can be controlled via a remote control switch and the teacher can remain at the best position for control.

(MR. SCHWARTZ ACTIVATES SLIDE PROJECTOR ON SECOND RP UNIT, VIA REMOTE CONTROL SWITCH AND EMPHASIZES RP CAN BE USED WITH FILMSTRIP AND SLIDE PROJECTOR, AS WELL AS MOTION PICTURE PROJECTORS).

Small Group and Individual Viewing...Sound confined through use of earphones

(MR. SCHWARTZ PLACES EARPHONES ON HIS HEAD AND PLUGS INTO JACKBOX WHICH IS CONNECTED TO PROJECTOR AMPLIFIER. FILM IS ACTIVATED AND DEMONSTRATES HOW AN INDIVIDUAL OR GROUP CAN VIEW A FILM PROGRAM WITHOUT THE SOUND DISTURBING OTHERS IN AN AREA).

> "Films should be as accessible to students as school encyclopedias. In addition, a student should be able to view a film with not much more difficulty than opening a book." (3)

(A TRANSPARENCY IS FLASHED ON THE SCREEN SHOWING STUDENTS AT THE LABORATORY SCHOOL OF THE UNIVERSITY OF CHICAGO, IN A DAYLIT MULTI-PURPOSE ROOM. A FEW STUDENTS ARE SHOWN SEATED IN FRONT OF A MOBILE REAR PROJECTION UNIT AND THEY ARE VIEWING A FILM PROGRAM AND RECEIVING THE AUDIO PORTION VIA EARPHONES CONNECTED TO A JUNCTION BOX, WHICH IS IN TURN CONNECTED TO THE PROJECTOR'S AMPLIFIER. A TEACHER IS DISCUSSING A BLACKBOARD PROBLEM WITH A DIFFERENT STUDENT, IN ANOTHER PART OF THE ROOM).

This philosophy is implemented at the Laboratory School of the University of Chicago. The Laboratory School supplies film services for classroom use but also for small groups and individuals by utilizing mobile rear projection through the use of earphones.

> "When students view a film during one of their option periods, they may use the 'RP" which is kept in the social science area.
>
> These two features - 'silent listening and illuminated environment' - enable our students to view films right in their own classrooms (or in any area) even though other activities are going on. Students may view films on the 'RP' during their option classes. These are films they may have missed, or films they want to see again because they were particularly helpful.
>
> Last year, our Freshman Project social studies teachers conducted a unique experiment in conjunction with a student term paper assignment on Asia. Normally, the student uses only source material from the library. In this experiment, this normal source material was supplemented with filmed source material. We rented thirty special films on Asian countries for a four week period and placed them near the 'RP'.

> Students could, if they wished, view the films during their option periods. Students were not required to view the films, nor were special time periods set aside for their viewing. We counted on our awareness of the attention-getting power of film. We anticipated students would 'like viewing them'. But we did not know if they would 'learn' from them under these conditions.
>
> A month later we found that the students did use the films as reference material, because almost all bibliographies of the term papers cited one or more films as source material." (4)

Other special learning areas in which mobile rear projection can be of excellent utility are those of physical education, driver education, and the school shop.

(A TRANSPARENCY IS FLASHED ON A SCREEN AND ILLUSTRATES A GROUP OF STUDENTS VIEWING A FILM PROGRAM VIA MOBILE REAR PROJECTION, IN A FULLY DAYLIT SCHOOL SHOP).

The school shop is an area which is particularly difficult to darken and subject to a noise factor from operating shop equipment.

An individual or small group of students can view films wearing earphones, while normal shop activity is continued by non-viewing students. The earphones also serve to prevent the shop machine noises from ruining the audio portion of the film for the viewers.

SUMMARY

The students of New York State have a sizeable inventory of motion picture projectors and films available to them.

The utilization and value of all of this equipment and material to the student, depends directly on the ease with which they can be brought to him, at the moment they are needed.

Our discussion and demonstrations identified Mobile Rear Projection as one vehicle which can give the student the critical access to existing programs... at the moment it is needed...where it is needed.

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TWO-WAY RADIO IN THE ALBANY MEDICAL COLLEGE PROJECT

Albert P. Fredette, Albany Medical College

The Two-Way Radio Conferences technique, developed by the Department of Postgraduate Medicine at Albany Medical College under the direction of its Associate Dean, Dr. Frank M. Woolsey, Jr., is now in its 9th year of existence.

Our Two-Way Medical Conference Network has grown from a relatively simple operation involving a group of six hospitals and the Albany Medical College to a rather complicated system involving 61 hospitals, 21 medical schools, 4 high-powered FM stations, and most recently, 4 VHF television stations.

By combining these facilities with broadcast telephone lines and community antenna television services, our Medical Conferences are available, on a two-way basis, in 7 northeastern states.

In addition to our own activities, the technique is also being utilized by medical groups in Pennsylvania, North Carolina, Ohio, Utah, and California.

You might take note of the fact that thus far the technique has not been attempted in any of the other arts and sciences nor in any level other than postgraduate.

I would like to suggest that you transpose our postgraduate medical use as it is described during this presentation to your own specific subject area and to any undergraduate level in which you may be involved, whether it be in elementary, secondary, or higher education.

It is understandably difficult for those who have not heard or participated in two-way radio instruction to fully comprehend the educational potentialities residing within this technique. The method preserves the all-important instructor-student relationship since an interchange of questions, answers, and discussions takes place almost as easily as it does when individuals are face to face. It is also important for those considering the possibilities residing within two-way radio to realize that there is no lack of visual components. Visual aids can be used extensively since the participating students gather in groups where the two-way radio facilities are available. The visual components include mimeographed material and projected transparencies distributed in advance to each participating group. All participants view and discuss a given slide, outline or chart at the same time.

The term "two-way" radio is technically incorrect. The facilities used are not those considered "two-way" by the Federal Communications Commission and frequently utilized for commercial two-way radio purposes. Although the two-way educational radio networks do indeed have two-way radio communication, this is made technically possible through the utilization of non-commercial radio broadcast stations whose broadcast transmitters are fed by multiple remote broadcast pick-up transmitters licensed to the broadcasting station. Since the questions and discussions originating in the remote participating groups are an integral part of the broadcast program, the method is acceptable to the F. C. C. and results in effective inter-communication. In the Albany Medical College Network the ease of communication and the integration and coordination of thought and material is further enhanced through a tone network alerting system which allows the local moderator in anyone of the participating groups to turn on his own individual light in front of the medical college moderator by simply pressing a button on the front panel of his transmitter. Through this arrangement the program moderator at the medical college knows immediately when someone wishes to ask a question or enter the discussion and there is complete continuity of questions, discussions and answers.

Since the easy discourse between instructor and student is an essential ingredient of the educational process being utilized, the Albany Medical College has limited the total number of participating groups to twelve per conference hour. This allows all questions to be answered.

It should be obvious that this technique is in no way similar to one-way radio broadcasting. The effects are also quite different. Those who are remotely located and only able to listen to the broadcasts of the two-way conferences receive much more pertinent instruction from the listening than they would if they were simply involved in listening to a typical radio broadcast. Physicians listening at home or in their offices hear the questions originated by their peers and state that approximately 90% of all the questions they would like to ask, someone else does ask. They also hear the answers to these questions.

In order to provide a better understanding of the technique, I would like to demonstrate the various conference formats presently used by the Albany Medical College.

These demonstrations will include taped excerpts from "off the air" recordings of actual Medical Conferences together with selected visuals.

Please remember that what you hear and see during these examples are exactly what you would have heard and seen had you been sitting with a participating group.

You might note that regardless of the location of the presenting faculty, all conferences are moderated from our Albany studios.

The duration of each of our conferences is one hour and at present we produce three types: the first is composed of a 20-30 minute formal talk on a specific topic presented by two or more members of a medical college faculty from their campus. The balance of the hour is used for a question and answer period by the physicians at the participating hospitals and the presenting faculty members.

(Tape recorder............excerpt 1 -
Use slides 1 through 4 on cue)

The full presentation by these gentlemen lasted approximately 30 minutes. The program was then taken over by our Albany moderator for questions and answers.

(Tape recorder...........excerpt 2)

The second program type is a "Clinical Pathological Conference." This is the detective type of medical program, not a "who done it?" but more like a "who's got it?" and subtitled "what is it?"

One week prior to this type of conference, a copy of the protocol (this is a history and physical examination of the patient - usually deceased) is distributed in mimeographed form to all the attending physicians at the participating hospitals. A copy is also given to the faculty person who is going to discuss the case; therefore, the physician in the radio audience and the discusser have the same length of time to study the protocol. On the day of the conference, the discusser reviews with the audience the highlights of the protocol and begins to select and/or eliminate various diagnoses suggested by this medical information.

(Tape recorder...........excerpt 3)

After approximately 15 minutes of discussion, a final diagnosis is selected. At this point, the program is open for questions from the physicians at the participating hospitals and directed to the discusser.

We have been asked occasionally if we think that many non-medical people listen to these conferences; and we have said, "We rather doubt it." This is based on the fact that postgraduate medicine has a language of its own. Listen carefully to the next "question" and perhaps you will see what we mean!

(Tape recorder...........excerpt 4)

As you can see, the days of double-talk are still with us.

Following this question and answer segment, the pathologist who is involved in the case begins to unfold the facts that were turned up prior to and at the time of autopsy. This is a formal presentation and involves the use of slides, which have been duplicated and sent out to the hospitals. These slides are in color and show pathological material such as specimens of tissue, complete organs, etc., and are simultaneously projected upon request of the pathologist. This portion of the program tells the doctors exactly what the diagnosis should have been and points out various reasons why one might mix it or confuse it with some other entity.

(Tape recorder...........excerpt 5 -

The final program type used in our Two-Way Radio Conferences is called a "Diagnosis and Treatment Conference."

This program type is unique and was developed by Dr. Frank Woolsey, Associate Dean at Albany Medical College. It is intended to involve the participating physician more actively than the preceding types. Let us now hear parts of an actual Diagnosis and Treatment Conference.

(Tape recorder............excerpt 6)

Following the reading of the complete protocol, which includes in addition to the normal history and physical findings, the results of certain routine laboratory tests, a period of 4 minutes is allowed, during which time the physician should indicate on his order form the various tests that he would order to assist him in arriving at a correct diagnosis.

Following this 4 minutes of "dead air" the moderator continues as follows:

(Tape recorder............excerpt 7 -

I think this gives you an idea of how the program develops. We finish by showing the slides and reporting the test results. We then allow the hospitals to ask for the results of other tests that they feel should have been made. This can be a rather lively exchange. Let us now listen to some typical questions and answers.

(Tape recorder............excerpt 8)

Following these questions and answers, the participating physician writes his diagnosis and major courses of treatment on the form and passes it to his local moderator, who in turn sends it on to Albany for evaluation.

At this point, a medical college faculty person is introduced and tells the audience what the diagnosis was and goes into a presentation of the recognition and management of said entity, which is followed by questions and answers relating to it.

We have hopes that this type of program will allow medical schools to evaluate the effectiveness of not only our two-way teaching method but the ability of practicing physicians to make a correct diagnosis and to prescribe proper treatment. This in effect would guide us in our selection of subject areas for future conferences.

Another important factor in the potency of two-way radio conferences is the utilization of outstanding authorities who are widely separated from the originating educational unit. Many of these experts would be unobtainable for "in person" presentations. They are very busy individuals, in great demand. Frequently they would not have the time to be involved in additional teaching. They are available for two-way radio conferences since these add relatively little to their work load. They stay at their own medical college, frequently within their own offices, and instruct by two-way radio, without the need for travel. If these instructors had come to the Albany Medical College to give their presentations their time contribution would have been a total of 806 man hours. The two-way radio method saved the guest faculty a total of 614 hours.

There was also an important saving of time for the participating physicians. If the physicians who actually participated in the two-way radio conferences last year had indeed traveled to the medical colleges from which the conferences were being originated, their composite travel distance would have been in excess of 5,000,000 miles. If their average rate of travel had been 40 miles an hour, this would have required 125,000 travel hours. These statistics relate to the participating groups. They do not include those who listen at home. They do not include the contributions of the other five two-way radio conference networks.

It can be seen from this description of two-way radio utilization and participation that the technique has been found to be acceptable. It is, however, unlikely that the full potentialities have been realized.

PANEL - Tapes for Teaching

Albert E. Solomon (Moderator), State Education Department
Jerrold Sandler, NAEB (Washington)
Coy Ludwig, NAEB (Washington)
William King, New Jersey State Education Department

Mr. Solomon:

The Bureau of Classroom Communications of the Division of Educational Communications, State Education Department, has been considering the possibility of creating some type of audio tape service, and making this available to teachers throughout the state. I have been given the responsibility of investigating the problems, and making some recommendations as well as suggesting a type of service to be offered. There seems to be no question as to whether or not an audio tape service should be offered. The questions are rather, what type of service shall we offer, how shall we distribute materials, and how can we best service requests? To answer some of these questions, and to give us some direction, I have brought together a panel of three distinguished gentlemen, all of whom have had experience in some aspect of audio materials as it relates to a state service. May I present Mr. William King, who is the State Director of Audiovisual Education for the state of New Jersey, Mr. Coy Ludwig, who is the Assistant Director of the Office of Research and Development for NAEB, but previously was the Program Director for the Empire State FM School of the Air, and Mr. Jerrold Sandler, who is the executive Director of the National Educational Radio Network, a Division of NAEB. In the interests of time, I will ask each of the gentlemen to speak, and questions can be taken after the total panel presentation has been completed.

Mr. King: TAPE DUPLICATION SERVICE

The Tape Duplication Service of the New Jersey State Department of Education has been in operation since 1951. Many of the taped programs used to start this Service were provided by the state of Minnesota.

At the present time, approximately 450 taped titles are available and a catalog listing not only titles but descriptions of these tapes is available. One copy of this catalog is provided by the State Department of Education to each school in the state of New Jersey.

We have been encouraging local school districts to produce good educational tapes and to make a copy of these tapes available to the State Department of Education for inclusion in the tape catalog. Groups such as the School Masters Club, the New Jersey Elementary Principals, the New Jersey Council on Education, etc., leave a copy of speeches by outstanding educators with the State Department so that these speeches may be available to New Jersey educators.

The demands for this Service have been heavy. With just a little encouragement the demands could be overwhelming. The present staff does not make it possible to do anything to try to build up the demand.

Some problems have been found. For example, teachers fail to include all of the necessary information when ordering tapes. Either they put the incorrect title and the correct number or an incorrect number and a correct title. They fail to indicate the speed at which they would like the tape duplicated and they do not say whether or not they are interested in having the tape recorded single track or dual track. Teachers seem to have difficulty in estimating the amount of tape to be sent in for tape duplication. In many cases, they try to conserve tape and ask to have as many programs as possible put on one tape. They fail to realize the problems which this tape will cause when the tape gets back to an individual school building.

In summary, the Service has been operating and has been very successful. Tapes are constantly being added and teachers are making more and more use of the Service. To have the program operate as effectively as possible, additional staff is needed.

One point that was not mentioned at the meeting which should have been mentioned, is the fact that agencies such as the Department of Institutions and Agencies, and the Department of Conservation and Economic Development have provided materials on discs. This material has been transferred to tape. A good example of this is the excellent series "Stories of New Jersey."

Mr. Ludwig: LOCAL EDUCATIONAL RADIO PROGRAMING

The day before yesterday I heard on the radio the voice of our former President, John F. Kennedy, as he spoke to the people of the United States in his now-famous inaugural address; I heard, also, reactions from all around the globe to the assassination of President Kennedy, three years later. I was able to hear these voices, now history, through the medium of audiotape recordings. Someone, somewhere, had filed these recordings in a tape library, so that they might be available for future use on appropriate occasions or for possible study by future history or political science students.

Fortunately, not every piece of information in a tape library is as dramatic or as spectacular as the assassination of a President, but I have used this timely example to point out the immediate value of storing information on audiotape for later use.

Now it happened that the station on which I heard the program was a network station, a large organization with a sizeable portion of its budget set aside for maintaining its tape archives. But what, I wonder, might I have heard had I been listening to one of the many college or school owned stations which would not have the extensive library facilities of a network?

Tape libraries are expensive to stock and expensive to maintain. Small stations with limited budgets can usually afford only limited libraries -- and often for the simple reasons that the tape on which to store the information is not available, or that a staff member is not available to do the recording, or, and this is most important, the absence of a source of first-hand information.

An educational radio station needs to present a large variety of programs for, in most cases, a highly specialized audience. In a college community, and most educational radio stations are in college communities, what do you do in your fifth week of broadcasting when you have already interviewed the Head of the Fine Arts Department, and the Head of the Poly. Sci. Department, and the Dean of Women, etc.? It is obvious, you must have some other source of program material. Where do you get it? Usually through a tape service.

But let us turn for a moment from educational radio to instructional radio with which most of us are primarily concerned. It is here that a tape library is almost mandatory. For example, just suppose that you are the manager of a local radio station which, during school hours, broadcasts programs for in-school use.

If you broadcast only three programs a week for each grade, you would have to produce over thirty original programs per week, if you did not have available some sort of tape library facility or outside program service. And producing this many program weekly is no easy task.

On a statewide basis, where a curriculum is recommended by the State Education Department, most in-school radio programs in a particular subject area are likely to follow pretty much the same pattern. Does it not seem wise then to share or exchange programs? Some central agency could collect and categorize the available program series and notify all the stations within the State of their availability. And in a state such as New York in which many State supported schools have radio stations or production centers, the State Education Department might well serve as this central agency.

There would be many advantages in having the State Education Department establish a central tape library and serve as the agency for the maintenance and distribution of the tapes. The State Education Department with its curriculum divisions would have a broad overview of the needs of all parts of the state and could have program series produced which would fill these broad needs. This would eliminate the costly and wasteful duplication of producing the same series on the local level in several different parts of the state. The State subject area experts could work with the committees planning the different series and provide information which might not be available to the local specialist or teacher producing such a program.

The State has large, up-to-date libraries in all subject areas which could be used as resource material by the program planners. But probably most important, the State Education Department could, through its regular channels, obtain funds with which to operate the audiotape library, including production of programs, publishing a catalog, dubbing and distributing tapes, and hiring the staff necessary for maintaining such a service.

The State Education Department could negotiate contracts with the local stations for permission to distribute tapes of their best program on a statewide basis. For this they would pay the local station a fee. This fee would provide the necessary funds for the local station to produce one or two top quality series rather than trying to stretch the budget to cover production costs of many programs of lesser quality.

I think I need to put in at this point, however, one word of caution. In the event that the State Education Department did start an audiotape library and contract with local stations to produce programs, it should take care never to be in such control that it forces the local station to lose its identity. Local identity and the ability that each small station has to do some particular thing best is what makes its production service of unique value to the rest of the State.

Also, I might point out that in cases where the local station or production center receives its operating funds through the subscription fees of schools in the area, a State library could be harmful to the station. We assume that such organizations are providing a valuable service under their present methods of operation. If tapes of their programs were made available free of cost to the schools through the State Education Department, then the operation would be forced to go off the air due to a lack of operating funds. If these stations went off the air, then they, of course, would not be available for producing programs.

Another important factor in operating such a library is keeping the material up-to-date. This is especially important in all areas of science. Tapes on space and rocketry produced in 1965 cannot be distributed in 1972. The program content and possibly even the production methods would be out of date. Hence, if the State Education Department should ever provide a tape service, it would have to make it a long-range project with a plan for the periodic up-dating of material, a problem which does not exist when programs are produced locally each week.

There are then disadvantages as well as advantages to a State maintained audiotape library. I do feel very strongly that such a library would be most valuable to the many educational radio stations throughout the State, if it were thoughtfully planned and carefully worked out at the grass roots level, first of all trying to determine the needs of the local stations, and then, and only then, trying to fill them.

Mr. Sandler: TEACHING BY TAPE

I think that two questions which need to be answered are: Can you teach by tape, and why teach by tape? Certainly research has indicated that teaching by any audio means is a valid method, and so there is probably no argument with whether or not one can teach by tape. However, when we consider the question why teach by tape, we may not find the answer to be so simple. By bringing into the classroom materials or tapes, we can bring to the children in those classrooms the voice and the ideas of people from all over the country; from all over the world, for that matter, and so widen the range of experience and awareness. The educational radio network may provide vast resources for the acquisition of audio tape materials. Certainly there is a tremendous supply of audio sources that can be tapped to provide the basis for a state-operated audio tape library.

Mr. Solomon:

Thank you very much gentlemen. I think your remarks have summed up very effectively the areas of consideration, and the directions in which we might possibly move.

Ladies and gentlemen, I think the panel has clearly indicated a number of concrete suggestions. We see that teachers are interested in an audio tape service, and make use of it when it becomes available. Certainly one way of distributing these materials throughout the state might be to make use of any number of the educational radio stations operating in New York. As far as what we might include in this library, as Mr. Sandler indicates, the possibilities are infinite as are the sources of material.

TECHNOLOGY AND TEAM TEACHING-THE YEARS TO COME

Ira J. Singer, Erie County, #1 BOCES

Within the next decade, only the skeletal structure of team teaching will remain in many schools. Teachers, having done their jobs well, will have made themselves more and more dispensable in formal teaching situations. Instead, youngsters will be adopting more responsibility for their own learning. As they do, the role of the group teacher will diminish and the tutorial function will become paramount.

Except for occasional lectures or debates conducted by faculty members in various subject areas, there will be little excuse for group teaching. For large group gatherings, television projectors and live or video-taped programs will bring any image before the students. Telephonic networks will carry voices from any location in the country to receiving schools. Group communications systems will permit any array of multi-media utilization of teaching materials. For example, one system will permit any individual to program an entire lesson complete with 16mm film, 35mm slide and filmstrip projection, tape recorders, and various viewing surfaces. At their desks, youngsters will have multiple choice response consoles keyed into computers for analysis of individual and group scores. Slide-mounted and audio-taped questions will appear on screens and be transmitted via headsets seeking student responses. Group and individual feedback will be measured on meters located at the console master or on EDP cards for further processing. All of the audiovisual devices will be integrated with the taped lecture, if desired, and automatically cued to project at the proper intervals. If a lecture is live, the lecturer may feed questions to his class, and by reading the response meters at the master console, have immediate knowledge as to whether or not his message is getting across.

Group-paced programed learning units may be presented to large groups via closed circuit ETV over cable or 2500 meg. systems. Central depositories will be established to maintain hundreds of audio and video sources to feed programs to neighboring schools districts. It is now feasible to select a film from a remote point and translate the signal transmitted from a central library into a filmed image for large group viewing.

In audio-video carrels, independent learners sitting in the privacy of a semi-enclosed booth, will be able to command unlimited resources. By the twirl of a mounted dial, the learner can code into action anyone of hundreds of centrally stored audio tapes containing poetry and dramatic readings, instrumental or vocal music, foreign language lectures and countless other presentations. As he listens to the tape, he can dial a pre-paced series of slides or other visuals illustrating the audio signal. He may also dial a film, vido-tape, or sound-slide program as part of his learning unit.

Another simple, but effective individual learning tool at his disposal is the 8mm cartridge load film projector. The learner simply inserts a cartridge into the projector and the film loop is thread and rewound automatically repeating the presentation until removed. Coupled with miniature table-top rear projection screens, or 8x11 sheets of glossy paper, a very satisfactory viewing system is compactly presented to the individual. Furthermore, competent school photographers can use any 8mm motion picture camera to film teacher demonstrations in sciences, music, and other subject areas - and package the contents in 50 feet 4-minute reels for individual selection by students pursuing advanced, remedial or make-up projects.

Another excellent facility for storing and playing back desired information is the video-tape recorder. With miniature cameras, a school may record its own programs and store them on tapes. A student teacher can watch his own classroom performance; a basketball team can see themselves in practice; a student can make up a missed lecture - all upon immediate command. Tape production and storage centers will enter into exchange programs making a wide range of materials accessible to districts throughout the nation. Low-cost videotape recorders and multi-channel 2500 meg. systems will help to supply the flexibility for curriculum programming and class scheduling so sadly ignored by single channel outlets.

Holding the key to collection, storage, retrieval, and transmission of information is the computer system. Even now, teleprocessing permits transmission of information to and from central computer and satellite schools. The input at the local buildings may be requests for data or learning programs. The requests are received by computers at central storage points. The computers process the requests, retrieve the desired information through random access from stored disc packs, and feed the information back to the requesting school. The feedback is printed out at the input station, or, with optical scanners and other video equipment still to come, be read visually on monitors placed throughout the building.

Perhaps there will be an international educational closed circuit system someday permitting school personnel in Toronto to simply dial a code, and via micro-wave signal, be taken on a guided tour of facilities at Newton or Evanston, or Melbourne--complete with two-way interviews with school personnel. Traveling superintendents with the wanderlust might not like this arrangement, but it would make experimental programs more visible throughout the nation.

In the area of research, high speed xerography units will print out requested data, articles, printed pages, etc., and present permanent copies to teachers and students. For certain types of information, library stacks and browsing will be limited to the private domain of resource librarians responsible for selecting, compiling, retrieving, and preparing materials for transmission.

The entire concept of library is changing and will continue to change at a rapid pace. The librarian will become a teacher and resource person. She will not be involved with stacking, pasting and stamping. Nor do I believe that she will ever fulfill the dream of many who see her as an audiovisual specialist as well as a librarian. It is too late for that. Schools need both services and should provide facilities for both. Teachers and students need help in compiling bibliographies, selecting materials, and in hearing what the librarian can contribute to a small group discussion or tutorial session on a particular author's style and impact on historical events. She should be able to assist a media specialist in compiling cross-media kits and should possess enough knowledge about audiovisual and auto-instructional devices to make intelligent suggestions to information seeking individuals. Beyond that, school personnel should have access to a communications specialist attuned to the shifting sands of curriculum and methodological innovation.

The media I have described will be as effective as the materials they contain and the ways they are used. Teacher attitude and the availability of quality materials are critical factors. Teachers have neither the time, talent, nor patience to produce their own materials. It is folly to purchase expensive production equipment and then bank on voluntary teacher desire and time for full utilization. Instead, district or regional centers staffed with professional artists, technicians, and photographers should be established.

At the Harkness Center in Erie County, a darkroom and studio have been constructed and a full time artist and staff hired to produce custom-made visuals on demand from district teachers. The program was introduced on a trial basis utilizing half-time personnel. Teachers in nine districts and thirty-six buildings were asked to order materials by checking a simple form, describing in brief, narrative terms the type of slide, transparency, photograph, poster, or model desired. A rough pencil sketch or some reference materials for the artist were other optional requests. The response was overwhelming. In less than six months, more than 2,000 pieces were sent to 36 buildings. On the strength of this evidence, the district principals agreed to cooperatively finance the service for a full year providing full time personnel and expanded facilities.

After proving the existence of strong teacher demand for high quality materials, regional centers should take on the more complex tasks of tape duplication, 8mm film production, and publication of research reports, curriculum guides, and other professional materials. When the regional center can no longer satisfy teacher demand, strategy dictates construction of more building instructional materials centers to handle the simpler, more immediate teacher requests. The success of the regional center may make the task of establishing building instructional materials centers somewhat simpler. The regional center may also be considered as the central depository for tapes, films, and other materials described earlier in my remarks. At the Harkness Center, for example, the following programs are functioning to translate innovational theory into instructional reality:

(1) Learning Resources Center - The primary purpose of the Center is to inform teachers about significant curriculum developments within the framework of effective Teaching Techniques and communications technology. The hypotheses for this approach is that teachers exposed to new methodology and media introduced within a specific curricular context are more likely to transfer these ideas and materials to daily practice than teachers introduced to "audiovisual," "methodological" and "curriculum" concepts as separate and distinct entities. The Center features large group, small group and independent study facilities for teacher use. A "Teaching Wall" in the large group area is equipped with a remote control console presently activating various combinations of five audiovisual sources, a rear screen overhead projector with ceiling mounted

mirrors, a natural writing level overhead stage built into the console top, a combination of seven sliding surfaces (chalkboards, flannelboard, front screens, custom overhead screen), black fluorescent lights and full control of room and wall lights. In the independent study area, teachers use carrels equipped with auto-instructional devices and programs, audiovisual devices, program ed texts, and current curriculum materials involving all subject areas, grades K-12. A special catalogue has been distributed to all schools describing the Center's materials. All equipment and materials in the Center is available on loan.

(2) Teacher Training Program - Teachers require constant retraining, updating, and introduction to new material. Instructional needs identified by on-the-job teachers, administrators and curriculum specialists form the basis for the in-service programs and courses offered by The Cooperative Board. Special Workshops in politics in (in association with The Taft Institute of Government), economics (in association with The New York State branch of the Joint Council on Economic Education), dramatics, modern mathematics, geography, BSCA (Biology) and Industrial Arts have been conducted at the Center. During the first two years of the program approximately 500 of the district's 1400 teachers have participated in cooperative board-sponsored in-service workshops ranging from 10 to 50 hours in length.

(3) Film Library - The Cooperative Board's Film Library contains 1800 prints available in all subject areas, grades K-12. A 150-page descriptive catalogue is distributed to each teacher. Orders are requested one week in advance with deliveries made to elementary schools twice weekly and secondary schools once per week. The library contains such quality films as "The Humanities Series," "The Project 20 Series," a large selection of NBC White Paper, CBS Reports and ABC Documentaries, The PSSC (Physics) Series, BSCS (Biology) Series, CHEM Study Films, Walt Disney Series and numerous titles of special interest. Automatic film inspection and cleaning devices are used and deliveries are made by the library's van. During the 1964-65 school year some 18,000 film orders were filled for 1,400 teachers in those district utilizing the film service.

(4) Community Resource Specialist Service - Teachers are supplied with the names of agencies willing to supply speakers anJ consultants for large or small group classes at all grade levels. Also supplied to the teachers are lists of topics for talks available upon request. The teacher need only consult his list and submit a request for a specific speaker to appear at his school on any given day. Such groups as The Bar Association, Medical Societies, Orchestral Societies, Art Galleries, Athletic Groups, Industries, Newspapers, Mental Health Organizations, Governmental Agencies, etc., have been extremely cooperative in supplying speakers.

(5) Pilot Demonstration Programs - District teachers may request and receive assistance in organizing pilot programs in Team Teaching, programed learning, new curriculum programs and other innovational projects. These requests often follow the Teacher Workshops and courses offered in the Learning Resources Center. One such program involved the teaching of computer math and computer program ing (via the auto-tutor) to a group of Seniors in the high school of a cooperating district. Consultant and material assistance are afforded

teachers for the design, evaluation, and dissemination phases of these projects which are usually demonstration in nature.

(6) A Computer Center - District Schools have school scheduling, test scoring, report cards, and numerous administrative tasks completed by the 1440 computer housed at The Harkness Center. Plans are now being formulated to adapt the computer to curriculum procedures outlined earlier in my remarks. The computer center presently serves some 75,000 students in three counties.

A vast supply of materials are being developed for the new technology. Such National Science Foundation sponsored projects as BSCS, CHEM Study, and PSSC programs have sponsored the production of cross-media materials. The BSCS techniques films and the PSSC ripple tank series have been produced in 8mm cartridge form. Project CUE in New York is attempting to assemble multi-media kits of existing materials to illustrate important concepts in the study of the Humanities. Programed materials are now available in almost all subject areas although the textual formats out-number the devices in actual use. Programed texts may be obtained in lengthy, full course form as in TEMAC Language or Mathematics, or in single concept form as in Renee Ford's Boyle's Gas Laws.

How will this wealth of material be used? The team structure has broken the log jam of the lock step schedule. It has illustrated that teachers will change their roles successfully and that groups of varying sizes are possible during the school day. It has given us a new tool for training teachers on the job, and for extracting the highest professional competence from team members. It has brought teaching colleagues together and encouraged professional consultation and exchange of ideas. It has enabled many teachers to work in a one-to-twelve, or in some cases one-to-one relationship with students - even in schools of one thousand or more. It has provided a setting for the introduction of new materials and devices. It has provided logistic formulas whereby students may work alone in the privacy of learning carrels. It has enabled teachers to spend less time on non-teaching tasks and more time on the preparation and execution of instruction.

But, despite all of the teacher-reported advantages, student achievement gains have been something less than spectacular. This may be due to faulty evaluation procedures, new organizational but old teaching methods, improper orientation to the program, or obsolete reporting practices. But, I suspect the problem goes deeper than that. It is time for teacherand student alike to tear a page from Saroyan, lean out of their village windows and cry, "Hello, out there!" The world is at their fingertips and they need only to press a button, or turn a switch to let it in. But, once the buttons are pushed and the switches turned on, the flow and mass of material becomes awesome; selectivity becomes a prime concern.

The team can supply valuable assistance in selecting and utilizing material from this mass. The large group instructor may wish to pre-record his lecture on a group communications system and spend the lecture time reading, conferring, or previewing new materials. Video-taping small group discussions can help individuals to see themselves as others see them. The design of independent study projects will take on new significance as teachers counsel students about the nature of the new materials and help to prescribe specific cures. For example, a youngster may view a filmed interview of Robert Moses, watch a running display of slides illustrating Moses' public projects take notes from an overhead screen written by a live lecturer, and indicate responses to questions concerning urban planning flashed on the screen or posed by the lecturer. With the computer analyzed results of student responses, team members should gain valuable evidence regarding follow-up activities for these students. In small groups, youngsters may discuss controversial points raised by Moses concerning the relocation of citizens for public works projects. Such a discussion may raise various issues the youngsters can investigate independently. Before the student tackles a problem, a team member helps him to select the proper materials. The teacher has obtained many of these references from the school librarian and communications specialist. The youngster proceeds to the learning resources center, where in one place, he can find references to books, articles, slides audio-tapes, video-tapes, 8mm films, recordings, and micro-film-with carrel dialing code instructions wherever necessary. He then proceeds to his audiovideo carrel and dials a tape of Louis Mumford's views on city planning, dials a video-tape of a recent East Side, West Side TV program dealing with the problems of family relocation, inserts an 8mm loop to view a film illustrating areas in his own neighborhood slated for redevelopment, reads micro-filmed newspaper accounts of large relocation projects, controls the pace of a sound-slide program produced by the local Chamber of Commerce concerning a new airport runway which will cause the evacuation of five hundred families - in short, have access to unlimited source material and not have to depend so heavily on teacher filtered versions, whether that teacher be on a team or in a self-contained classroom.

Perhaps we will affect student achievement to a greater degree as team members continue to redeploy their time and take on the roles of resource people and consultants in small group and tutorial situations. When students can turn to teachers for assistance in interpreting all they have heard or witnessed through modern technology, distilling human values, structuring events in some kind of logical array to bring about sounder judgement and decision making - then will team teaching transcent the organizational status and strike at the heart of student learning.

PHILLIPSBURG IN WORDS AND PICTURES: A VISUALIZED COMMUNITY-SCHOOL PUBLIC RELATIONS PROJECT

Constance Moy, Phillipsburg, New Jersey

The study of community life is made on the third grade level in the Phillipsburg New Jersey Public Schools. Our basis social studies text, Your Town and Mine, deals with a typical community. The third grade teachers felt that in conjunction with this study of a typical community, our pupils should become acquainted with the community in which they live.

The teachers found out there was very little written material for the young child as well as the adult. How could the social studies unit be taught effectively if there is so little material available? It was felt that the best way to do this would be to organize a pictorial presentation of Phillipsburg.

A set of approximately two hundred 2 X 2 colored slides was produced with an accompanying manual which contained the historical information about the slides.

The pictures taken included the past and present day aspects of this town of about 18,500 persons. The planning of this visualized social studies unit had required a period of two years. The research of material to accompany the slides, the production of the slides and organization of the unit were done by the third grade teachers with the approval of the Phillipsburg Board of Education; Dr. Herbert K. England, Superintendent of Schools; Mr. Raymond J. Williams, Elementary Supervisor and Mr. Gene P. Healey, Assistant Elementary Supervisor. The photographs were taken by Miss Constance Moy, audiovisual adviser and faculty member.

The slides were divided into the following categories:

SET I

1. Overview
2. Town Sections
3. History
4. Homes and Housing

SET II - Businesses

SET III

1. Public Schools
2. Parochial Schools
3. Churches

SET IV

1. Industries
2. Future Expansion

SET V

1. General Services
2. Banks

SET VI

1. Health and Safety Services
2. Recreation

One feature of the manual which the teachers have found as a great help is the INDEX which was provided in order to find anything they wanted about a particular part of town.

SAMPLE OF WRITEUPS FOR MANUAL

11 GREEN'S BRIDGE

The section called Green's Bridge was formerly called Beidelman's after an early family who owned this land. It included the land from the bridge beyond Amore Greenhouses which later was known as Green's Bridge.

The Green family operated the Green's Bridge Hotel - a tavern with rooms to rent for the workers and travelers on the Morris Canal. The hotel was torn down when it was sold in the Amore's Greenhouses. There had been an underground spring, in the celler used to keep beer, milk, butter and vegetables cool.

The Morris Canal was the only canal ever to have hoist cradles to pull the boats up to the next plane. Part of Lock Street is the filled in canal bed.

Also living in this section was the town's first physician Dr. John Cooper.

96 FREEMAN SCHOOL

The Freeman Elementary School was built in 1871 and contained the first Phillipsburg High School. It was 62 X 41 foot main building of brick with stone trim and three stories high with a basement and additions at the front and rear. Including the 240 X 100 foot ground and furnishings the cost was $46,431.84 which was considered a lavish expenditure in those days. Hence, the name of "CRYSTAL PALACE."

Elementary grades occupied first and second floors and the high school and Superintendent's office on the third floor. Boys entered on the north side and girls on the south. In 1908 the new high school was at the Reese School and the Fillmore Street Building was entirely devoted to elementary instruction. It served till 1941 when the present Freeman School was erected on the same site. It was named after Samuel Freeman who was the First City Superintendent from 1869-1874. It is located at 120 Fillmore Street and has 16 teachers and 469 pupils.

147 WARREN FOUNDRY AND PIPE DIVISION OF SHAMOON INDUSTRIES, INC.

The Warren Foundry and Pipe Division of Shamoon Industries Inc. is the oldest manufacturing concern that is still in business. The company was chartered as the Warren Foundry and Machine Company on March 3, 1856 and began operating the following year. John Firth and John Ingham were the two Englishmen who founded the company.

The company was noted the world over for making cast-iron pipe. In 1951 Solomon E. Shamoon gained control of the company and the hundreds of employees make pipe which is sold throughout the Northeastern and Central United States. Three types of pipe are made: bell and plain end, mechanical joint, and tyton joint made in sizes from 4" to 12".

The company was semi-dormant for some years. The manufacturing facilities have been modernized and production is booming again. Approximately 50,000 tons of cast-iron pipe leave the 21 acre plant for various parts of this country. They are one of the few producers of cast iron gas and water pipe, pipe fittings and cylindrical castings.

The unique feature is that there are a group of slides which are aerial photographs showing the "Forks of the Delaware," the point which the Lehigh River flows into the Delaware River. Most of the aerial photographs were taken after a snowstorm which gave contrast to the important features of the town. By using this set of air photos it was felt that now the children would be able to obtain an orientation of local geographic factors which they could not obtain from maps.

The slides in each category have been shown to the children at the place where they are studying it in the unit. The children are quite interested in the section on industries as they can see the places where their fathers work.

Since the project has been finished there has been great community interest. It has been shown to PTA's; other Service Groups. The Chamber of Commerce has taken the historical points of interest and have had a local map with points of interest made to distribute to anybody wanting to know more about the town. Children have gone home telling about the various places in town and want their parents to take them to see. After adults have seen the parts of their community they have a greater appreciation for it.

EDUCATIONAL COMMUNICATIONS FOR POTENTIAL TEACHERS IN NEW YORK STATE

Sherwin Swartout, Brockport State University

In gathering information concerning the status of Educational Communications for potential teachers in New York State three rather important resources were used: (1) current practices survey (2) current publications and (3) faculty interview.

First, I'd like to express my appreciation to those who answered the questionnaire that I sent to selected Colleges and Universities in New York State. Secondly, you should know that your suggestions were compared with current published material concerning this topic. Then interviews with selected instructors and lay public were compared to insure as accurate a picture as was possible in the limited study.

Harold Hand, used to say, "whatever the school curriculum was, it was never really understood equally by students, administration, parents and teachers." Here is the way Educational Communications looks in teacher education in one college now devoting a major part of its time to producing elementary and secondary teachers in New York State. You will notice the first four years of college is divided between Liberal Arts courses, professional education courses and student teaching. Present pressures and trends are tending to reduce professional education and methods courses, time spent in student teaching (unless an internship is in operation) and to increase the number of required liberal arts courses.

You are probably aware of the study to be undertaken (which is sanctioned by Dr. Conant) and which intends to show professional education courses may be reduced if internship programs are developed along with a strong Liberal Arts curriculum. According to the November 8 issue of the New York Times, Vassar, Brooklyn College, Fredonia, Colgate University and Cornell University will participate in the study. The study will advocate:

1. Placing most of the responsibility for teacher certification on the colleges and other universities rather than states,

2. Making actual performance in the classroom the major factor for certification,

3. Shifting a greater part of the on-the-job training to local school systems, and

4. Making the state authorities mainly responsible for supervision of the practice teaching and on-the-job training.

Since all disciplines are now offering or requiring more of what I call "splintered courses" for graduation, (department heads call them "courses in depth), a teacher may very well become much better prepared in educational communications, than has been true up to now. This is because instead of taking a single, survey, three hour elective or required course in education which encompasses methods, radio, television, photography, semantics, production and administrations, he may now conceivably be required to take 30 or 40 hours of the related courses mentioned above.

This, of course, should result in a much greater breadth of knowledge, and if it is coupled with proper methods courses and student teaching experiences should produce superior teachers.

Our campus is probably typical of growth in New York State so I am using two slides to indicate facilities now in operation and what is to be in operation within two to five years when our enrollment is to increase from 2200 to 3500 or more.

Here is the story of the relative importance of Educational Communications and other areas of study in New York State teacher education. The information shows the squeezing of Educational Communications not separated into distinct disciplines. We note a dicotomy, they are squeezed when combined in the education department -- yet they become popular in splintered groups. (Look at questionnaire findings at end of this report.)

It has been said that, "Those who cannot remember the past are condemned to repeat it!" In this day and age, however, there doesn't seem to be any excuse for any teacher not to "remember" the past with the many retrieval devices now available, including books. Francis C. Rosecrance, Dean of the College of Education Wayne State University, once said this about teachers. "All teachers whatever they teach in military, in business, in industry, in college, schools and other educational institutions, -- need to have three qualities -- character, commitment, and competence. Assuming that one who aspires to become a teacher already possesses the first two of these three, competence is the next most important." He also went on to say that in addition to these three essentials, most of us recognize as prerequisites to good teaching, a warm personality, an interest in and a liking for learners, a better than average intelligence, emotional stability, and sympathetic understanding of others.

Lest these ideas seem too simple to be academically respectable or even irrelevant, let me hasten to refer you to an earlier writing of Dr. Dale called The Art of Confusion written prior to 1949, which is a satire on the necessity of graduate students of being sufficiently confusing in order to satisfy the average advisor. Most of us after graduation need have no fear of this problem. We are sufficiently confusing without even trying. According to the report of speakers at the last Biological Photographers Association held here in New York City, as reported in The Film World, graphic presentations are the most used and also the most abused, so even when we try to clarify we often miss our target.

While no one seemed to doubt the effectiveness of television as a teaching tool, conference speakers went on to mention that it was extremely costly and difficult to use properly, they advocated the increased use of the overhead, films, filmstrips, graphs, maps, slides, charts and pictures for keeping teaching simple.

In other words teachers must be continually on the lookout for better ways of teaching. No good teacher can remain a good teacher for long without sincerity of purpose and continually trying to learn more about the learner.

Television is generally relatively expensive, but for Alabama the average budget is approximately $600,000 a year which is only about $1.00 per student or $250 per program. When one considers what the $1.00 per student may bring to the learner, this is relatively inexpensive. TV may, of course, cost several hundred dollars per year. So when is a medium or device too expensive? When another will do the same job well or better for less.

The ability to explain well requires much more than is apparent at first glance. The ability to explain well requires many characteristics, attributes, and abilities -- (1) A teacher must know the nature of the human organism and how learning takes place, and what motivates behavior, (2) He must also be able to appraise students accurately and make educational diagnosis to help students develop in a desirable fashion, (3) He must know what to teach and how to teach it, (4) He must know how to help people think critically and independently. I think the following slide taken from the Saturday Evening Post, illustrates the dangers of lacking these qualities, (5) Know how to stimulate people to want to keep on learning, that is, to be continually curious, inventive, and even creative, (6) Know how to help students become conscious of their own values, to continually examine their own values and build new ones which satisfy both themselves and the society in which they live, and (7) And lastely they must know how to work with small and also with large groups of students of varying ages.

In New York State Educational Communication for teachers include needs and trends:

1. Potential teachers must recognize that communications is not carried out with homogeneous groups; but with heterogeneous groups.

2. They must learn to live in a state of flux and use a system. They consult with librarians on book purchases, on handling of special methods, pamphlets, magazines, documents of all kinds, and on classification and cataloging problems, as well as on reader's problems and difficulties that continually confront students. There is currently a trend toward decentralization of library, or learning materials, according to frequency of use or need. This is happening on our campus also.

   A good friend of mine happened to be on our campus the other day and was calling my attention to the fact that there might be several film libraries springing up on the very same campus, "if I didn't take good care of what was going on".....Actually I'd be very happy if this did happen because many of the "sub-libraries" or other audiovisual libraries that are developing will want to make use of the central A-V facilities and they probably wouldn't have existed at all had the A-V center not done what it did for the last fifteen years or so. In other words, we've done such an efficient job of educating our staff members as to the value of media and materials in learning, that they are not willing to teach without them at their fingertips. This means that administrators must be willing to pay the bill in both materials and salaries for the people to take care of materials or they must bring all the materials under one single center which might be highly efficient financially, but probably highly inefficient from the learner's point of view. Therefore, under this heading I would like to make the point very clearly that I see two trends. One, toward centralization of the more expensive, easily transmittable materials like video tapes, television programs, resource persons via radio and telephone exchange, and at the same time, decentralization of the relatively inexpensive materials such as filmstrips, slides, transparencies of all kinds, pictures, copies, recordings, and even motion pictures, because they are really relatively inexpensive compared to television.

3. For the ever increasing team teaching, we need a sharper analysis of curriculum. Along with this, of course, is included learner needs.

4. Concurrently with the multitude of commercial learning material, there are also more tailor-made materials. We are now able to buy what supports our purposes and produce the materials to complete our needs.

5. We are also in a period of more critical use of mass media. In short, we are now producing more experienced teachers who are able to reduce the number of failures in students.

About fifteen years ago I started working on a project which was completed in 1960 in the form of a book called Integrated Teaching Materials. We felt, at that time, that we had been segmented to the Nth degree during the 1930's and 1940's. Such specialization seemed unnatural, unnecessary and unsatisfactory, so, educators began pushing toward integration -- a sensible integration of related study area, means, and ideas in order to reach the ends or learnings that seem so important in our times. This resulted in certain segmented chapters being written as units of study, much like the explanation of the unit in the film produced by Bailey Films. My good friend Ruth Bradley, of Palo Alto and San Jose, helped produce this film on "A Unit of Work." It is really very difficult to integrate various means, materials and techniques so they result in a Unit of Study which produce desired behavior changes. Now, I think, if we were to rework our books in terms of present day trends, we would call it "Segregation of Materials" or "Specialized Areas."

A good example of this trend is outlined in the book called The School Library Facilities For Independent Study in the Secondary School. This is published by the Educational Facilities Laboratory. In this, the point is made that it is very difficult to integrate all materials into a single learning area like the library and that administrators and teachers, or those who would be called teachers, must get used to the idea of ever increasing the size of a library and the amount of materials and hardware that go into a library to make it conducive to maximum learning. If our concept of communication and of libraries have changed over the last five years or so, and they have, what then, do teachers do in such libraries? Answer: "They confer with the library staff on relevant materials to use for class work, those appropriate for general presentation in classroom, those more suitable for students working in small groups, and those appropriate for use on an individual basis. They preview films, filmstrips, slides, recordings, confer on the purchase or rental of instructional materials, and the possibility of producing those not available from a commercial agency. Along with all of this should come increased efficiency in learning and increased quality of teaching.

Now let's turn to the problem of learning to live in a state of flux. We have to learn to use various systems and we can't afford to decide that any one system will stay with us for any set length of time. We are all able to plan only a relatively short segment of time for each system. In speaking of systems I am reminded of the highly technical system that is currently being shown at the World's Fair not too far from here, whereby every experience on the learning program has been thought out and is presented to the learner via television, slides and the like. Some might call this the automated classroom.

According to John Teal Bobbitt, Director of Research, Encyclopedia Britannica Films; "the automated classroom though still in the laboratory stage, seems close enough to reality for educators to be seriously concerned about its implications. The computer based laboratory for automated schools systems completed at the Systems Development Corporation in Santa Monica, California provided for instruction by television, films, and slides, as well as by conventional lecture and textbook methods. The computer keeps performance records for all students. It records attendance, keeps curriculum and grade records, performs statistical analysis and provides for student registration and scheduling. However, the automated classroom according to Mr. Bobbitt, even if judged desirable would probably be beyond the means of most school systems for several years, but it was likely that there would be a growing market for special purpose computers." Educators, however, are warned against the *uncritical acceptance of attractive innovations*. Speaking of innovations I would like to refer you to a relatively new book, edited by Matthew B. Miles, called *Innovations In Education*. Contributor Benhamin Willis believes the use of educational media is toward part-time, evening, and television college courses to bolster our sagging percentage of enrollments compared to public demand. He says, "We will seek more teachers with backgrounds in liberal arts and sciences to open doors to cultural opportunities for all children and require a five year program of pre-service teacher education including or followed by internship."

Fellowship programs for teachers will be strengthened, study teams, workshops, teacher exchange programs and internships will play a more important role in continuing professional growth. Educational communication for these people will consist of all of the audiovisual "devices" that closed circuit television or open circuit television require. Through use of closed circuit television, clusters of schools are developing in both strength and quality in curriculum areas heretofore classed as minimum or non-existent.

Dr. John Fisher, President of Teachers College, Columbia University, says, "Virtually every innovation in American schools during the coming decade will be influenced by two strong currents of change. One of these is the growing effect to improve relationships between races and the other is the increasing insistence of teachers on the right to express their views on the policy question." And then he goes on to say, "Although strong professional organizations will continue to be needed at the state, local, and national level it will also be necessary to enable the individual teacher to participate directly in policy development." This is where communications breaks down normally.

Well, what do we teach? What kind of educational communication do potential teachers encounter on their way to becoming full-fledged teachers? Here is a current chart of the curriculum from State University College, Brockport. Our friend Mr. Brickel in his now famous report made after studying the school systems of New York State had this to say about Campus schools where student teachers are supposedly learning how to teach. "The Campus schools at the eleven State University Colleges, schools for Elementary or Secondary students located on the campuses stand as monuments to our inabilities to distinguish between the design, evaluation, and dissemination functions." The Campus schools in our state should stand out as examples of what ought to be done. If they do this for our potential teachers, we can be proud we have them. They were never intended to be public schools. They are simply a place where demonstrations and experimentation can take place, where the students can be brought in contact with improved teaching or learning materials and techniques more readily than in many public schools. At our college we would like to have all of our students at least observe optimum teaching and learning situations in our Campus School and then student teach in one or more off-campus public schools.

Throughout this period of rapid advancement we have not avoided problems. There persists indications of important breakdowns in the invention and design of communications equipment. Simultaneously, demonstrations by equipment dealers, feature technical advances in sixteen millimeter, eight millimeter projections including self-threading and cartridge loaded-projectors, automatic projectors, tied in with tape recorders and record players with inaudible signals, and a video tape recorder that might in time revolutionize the use of closed-circuit television. One manufacturer announced the invention of a cartridge loading projector push button controlled and self-contained, similar in appearance to a portable television set with nineteen inch screen. The rapid development of communications media, after 1960, owed more perhaps to the support of the National Defense Education Act than to any other single factor. A five year progress report released by the U.S. Office of Education, showed that a total of eight-hundred million dollars had been invested on a matching fund basis to finance a hundred and eighty separate projects. More than nineteen million dollars was allocated to the communications media program.

As a result of the hard looks being given the disciplines and education departments over the state, team teaching is growing in importance. We need a sharper analysis of curriculum and this is one way to get it because each staff must be informed of what the other is teaching. Along with this, of course, is included more and more efficient, learner materials.

There are more tailor-made materials. These materials of learning are tailor-made to individual needs because industry cannot afford to produce these materials in the rather limited amount needed for any one area or state. Publishers have to get bigger. Everything seems to be getting bigger or smaller in the United States. In order to make a living, in farming acreage is increased; in order to publish books you must have more sales or cut costs by going into the paperback business, or by reducing the number of pictures or pages per book. Instead of having a twenty-four chapter book you might have to produce twenty-four different books each one with a different title. We seem to be in a business of extremes - either wide screen TV or miniature TV.

It is interesting to note that in the media business the number of manufacturing companies is increasing, while the number of book publishing companies is decreasing. AV seems to be "off and running." But you can't start out big in everything, so you must tailor-make some things for the individual needs. We did this when we decided we would try self-learning devices. In order to teach the audiovisual proficiencies needed to thread a picture projector we play a tape, or a recording. It works out fairly well, but we still need overseers to help. Therefore, we have lab technicians and persons with limited skills who may work part-time, while they are learning.

SUMMARY

In summary, according to the results of my questionnaire, reading and interviews, it may be said the Educational Communications in New York State is really only beginning to awaken. Our curriculum includes more courses, our colleges and universities are using more educational communicational facilities, (including highly imaginative technical devices and systems) as well as, hiring better qualified faculties.

Teacher education program directors want more comprehensive instructional resources centers that make communications devices more easily available. In short, AV seems to be entering a period of very rapid growth. Both teachers and students are demanding production centers, libraries that include much more to aid in learning than books, a much broader selection of books, also, as well as consultant services to help keep up with the times. They are not so much concerned with the number of credits in a field as performance. They also see the need for the breaking away from a multitude of special certifications, in favor of the general certificate, leaving room for elected specializations during later graduate education. They are working with researchers, businessmen and the military to learn the true value of media in learning and teaching.

There is no doubt that all educational media create additional interest, retention and clarity for the learner. If you use only the first letters of these words Instructional Resources Center is brought to mind. Yes, things are "looking up" in Educational Communications for teachers in New York. We have reached the point where staff and administrators worry less and less about what media cost and think only of efficiency in learning. This may be called a double rainbow period -- a time when we live in the present, but ever mindful of what has happened in the past and always with both eyes on the future. It is a time when teaching staff, students and administrators are demanding Instructional Resources Center Directors for every institution.

There was a time when Educational Communications for potential teachers was a parallel to the slide of the person barbecuing a chicken on a spit -- turning the crank by hand. The beatnik looking over the fence says, "Hey Dad! your music has stopped and your monkey is on fire." We have now passed this stage! We now have music and enough electronics to turn the spit of educational communications for years to come.

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October 13, 1964

34 sent out
29 returned
85%

TO: Chairman
Department of Education in all New York Colleges

FROM: Sherwin Swartout, President
New York State Audiovisual Council
State University College
Brockport, New York

I am scheduled to give a presentation concerning the status of "Educational Communications (Audiovisual education) for Potential Teachers in New York State" at the November 25th meeting of the New York State Audiovisual Council Conference.

It would increase the accuracy of my talk if you would be able to answer the following questions. Please check and return, being sure to make comments if you desire.

Thanks very much.

Date ________

Institution ________

1. Approximate number of certified teachers graduated each year 11,848.

2. Areas of specialization are: Liberal Arts 21, Teacher Education 16, Engineering 2, Law 1, Medicine 2.

   Other ________.

3. The following courses are required of each graduate:

   (1) A-V Education 4
   (2) English Communications 16
   (3) Photography ________
   (4) Basic Art 8
   (5) Other ________

4. A-V Education is integrated with the regular "methods" course which is required. Yes 21 No 4

5. "Educational Communications" courses which include familiarization with "newer media" are offered on an elective basis. Yes 11 No 9

6. Our college or university has a full-time A-V Director 7, ½ time 2, ¼ time 3, no A-V Director but a projectionist service 12.

7. Please give your suggestions for improving the Teacher Education Curriculum. (1) Additional A-V should be added to our program of teacher education. (2) Required undergraduate course in newer educational media plus required A-V education. (3) We need a full-time specialist in educational communications or instructional media. The University needs a comprehensive audiovisual service. (4) Education integrated with required course - "Also offer an

elective course." (5) We have a TV communications faculty member and a
projectionist service. (6) Stronger liberal arts concentrations. Bet-
ter integration of student teaching and special methods. Fewer required
courses. (7) Suggestions would be more than I could write in four lines.
(8) The installation of a production center to develop "on call" AV
materials for the faculty to improve their own instruction. (9)
Strengthen programs preparing college teachers for teacher education.
We need more and better teacher education to meet expansion. (10) I
would suggest greater flexibility of course offering in content areas
under a broad directive or so many credits from State rather than the
rigid check list approach of State that promoted survey type courses.
Institutional integrity ought to be respected in this and other areas.
(11) Increase use of A-V materials in Student Teaching Seminar. (12)
Additional courses in the production of A-V materials. (13) We are
hoping to create an AV studio in coordination with a curriculum lab. If
money becomes available, we hope to obtain closed circuit TV. (14)
Change certification to N-3, 4-6, 7-9 (rather than N-6 and N-9). Paid
internship first year of teaching - tie fifth year course to this. (15)
Many of our staff feel our A-V offering is inadequate. No more than 20-
25% are able to take elective A-V courses. In other courses AV training
is at best catch as catch can. (16) Greater public schools coordination.
Greater exposure of college student to children and earlier in their
professional sequence. (17) With the values inherent in the sensory
instructional apparatus to teaching, no teacher of education curriculum
should be considered complete unless students as prospective teachers
get ample exposure to this area. We are sensitive to the need for doing
more in this field.

Signed ________________________
Position ________________________

CERTIFICATION OF EDUCATIONAL COMMUNICATIONS PERSONNEL

Loran C. Twyford, State Education Department

During the past two years the Division has worked with the Bureau of Certification and with the New York State Audiovisual Council on the certification of Educational Communications personnel. On March 27, 1963 a Certification Committee of the New York State Audiovisual Council submitted a report on minimum qualifications for directors of Educational Communications. The members of the Certification Committee of the Council were Bert Green, Ned Bernard, Eugene Oxhandler, Frank Mathewson and Harold Jackim. These recommendations were forwarded to Carl Freudenreich of the Bureau of Teacher Certification. Dr. Freudenreich spoke to a meeting of Educational Communications personnel representing major audiovisual centers at the Communications Convocation in November 1963 to describe the general procedures for certification.

On January 16, 1964 we submitted four names to the Bureau of Certification for inclusion in the Department's Certification Committee. They were Dr. Franklin Barry - Syracuse, Dr. John Miller - Great Neck, Dr. Howard Sackett - Lewis County, Dr. Marvin Rapp - Nassau Community College.

On August 19 Dr. Freudenreich notified us that 300 qualified persons had been nominated for membership on a twelve-member committee which will review certification requirements for administration-supervisory positions in the public schools. There is a good chance that none of our names will be included on the nine-member committee. However, every individual and group having an interest in administrative-supervisory certification will have an opportunity to present recommendations during regional hearings that will be held this Fall. After the hearings have been completed the committee will file its recommendations for certification and if current plans are followed, certification may begin about a year from now. Several important features of certification should be noted. Certification places a floor above which all Educational Communications personnel are required to have qualifications. Those personnel currently engaged in Educational Communications activities will probably be able to qualify for certification on the basis of a grandfather's clause.

On November 16, 1964 Commissioner James E. Allen, Jr. released the following information concerning certification: A new advisory committee to review and recommend certification requirements for administrative and supervisory positions in the public schools of New York State was announced today by Dr. James E. Allen, State Commissioner of Education.

All administrative and supervisory positions in the schools will be considered by this new temporary committee except that of the school superintendent for which certification requirements were revised in 1961.

The new advisory group is composed of public school and college representatives as well as a member of the public-at-large. Commissioner Allen has expressed his hope that "the committee will give specific consideration to the consolidation of the certification requirements for administrators and supervisors."

The first meeting of the committee will be held in Albany at the State Education Building, Tuesday, December 8, 1964. Plans and a time schedule for the study will be considered at this session.

Three "open hearings" will be scheduled for this group in December. They will be held in Albany, Buffalo, and New York City to give concerned groups and individuals an opportunity to present their views and proposals to this ad hoc committee and to members of the Advisory Board in Teacher Education, Certification and Practice.

Members of the committee announced today by Commissioner Allen are: Paul Balser, Principal, Long Island City High School, Long Island City; Lillian T. Brooks, Director of Elementary Education, Rochester; John Brophy, Professor, School of Business Administration, University of Rochester; W. Wallace McDowell, Vice President, I.B. M., Endicott; Charles R. Fall, Director of Teacher Education, SUNY, Buffalo.

Also, Daniel E. Griffiths, Associate Dean, New York University, School of Education; Louis M. Klein, Superintendent, Harrison; Robert A. Lorette, Professor of Education, SUNY, Albany; Donald H. Richardson, Principal, Valhalla High School; Howard G. Sackett, District Superintendent, Lewis County; Hanford Salmon, Assistant Superintendent for Personnel, Syracuse; and Rosalie Samuels, Principal, Northside School, Farmingdale, New York.

The Division of Educational Communications will keep key Educational Communications personnel informed of recent developments in certification.

STATE PLANS FOR EVALUATING INSTRUCTIONAL FILMS

Albert E. Solomon, State Education Department

At this time last year, a presentation was made at the Convocation concerning the status of a media evaluation project, which at the time was in its infancy. The project had been given a name--AIM (Appraising Instructional Materials)--and a direction--to explore the possibilities of evaluating currently produced media and to make such evaluations available to all educators involved in purchasing and renting media, as well as to interested classroom teachers. The problems of establishing an evaluation service were multitudinous and impossible to avoid. As Project AIM was developed, each problem was met head on, and we were able to overcome insurmountable difficulties.

The entire field of commercial evaluations had been explored and it had been discovered that these evaluations were generally commendations. We were able to discover very few negative reactions, and consequently, felt that these did not represent critical evaluations. There was an obvious need for information that would indicate to a potential purchaser, which, of ten possible titles, might be worth previewing, and which, of the same ten, had been found, by evaluators, to be wanting.

Perhaps it is necessary at this juncture to give some background information concerning the birth of Project AIM:

Literally thousands of new titles are produced every year in the area of films, filmstrips, records, tapes, transparencies, and other materials. Classroom teachers, deluged with producers flysheets and pamphlets, have nothing but obviously biased reports upon which to make a selection. The alternative is to consult with the audiovisual director, whose mail may be six or seven times as heavy as the classroom teachers. If it is impossible for the classroom teacher to keep up with the quantity of material produced in the area of his specialty, you can imagine the audiovisual director's dilemma. The solution to this ever-increasing problem would seem to be the commercially-prepared evaluations and there are some good ones. Bertha Landers, for example, publishes an evaluation and of course you are all familiar with Educational Film Library Associations evaluations, and there are others. However, one rarely finds anything more than a limitation included in the evaluation, and hardly ever does one find negative criticism.

The Division undertook this project to provide critical evaluative information because we saw a problem, we became aware of a need, and as a state agency, felt that we were in a position to make a contribution. Our task has not been to determine the feasibility of such an undertaking, but to design the implementation of Project AIM.

Project AIM operates within the limits of NDEA, Title III, and therefore, is confined to those curricular areas covered by the existing law (which very shortly, with the President's signature, will be expanded to cover almost all subjects). The first undertaking was to compile a list of films representing the current productions of the major producers. Then contacts were made with curriculum specialists in the State Education Department. The project was described in detail, and they were asked to identify key people to act as evaluators. These potential evaluators were requested to participate in the experimental phase of the project. Evaluations began coming in as films were received in the field and previewed. The evaluators had been selected well. We discovered, however, that top-notch classroom teachers and curriculum experts were not always the best media evaluators. A few teachers, because of media prejudices were hypercritical. We also discovered why it is difficult to find negative criticism. Libel action is possible if one sullies the reputation of anyone whose livelihood depends upon that reputation. At first, this seemed to be a difficulty which could not be avoided without altering the rationale of Project AIM; that is to say that the evaluations needed to be accurate and reasonable judgments in order to alert educators to the limitations and strengths of the materials available.

In this experimental phase of Project AIM, the project director and his consultants had established the need for a statewide evaluation service. They had also established that there were some knotty problems, the solutions to which had to be found in order to activate the Project.

Now to report on the progress of Project AIM since June 1964. As of this date, I can report to you that there are seven evaluation centers functioning, films are being previewed in all NDEA curricular areas, and we are expanding our numbers of evaluators as we include more and more producers. We have been successful in overcoming some of those early problems. We now hold oréentation seminars for potential evaluators, so that they are aware of our major objectives and have some experience in actual media evaluation. This has proven quite successful. Reactions have been excellent and evaluations of high quality. Participating school districts have been, not only willing, but in all ways eager to participate, in order to provide a service to all teachers throughout the state.

Our method of contact has been simple. A phone call is made to the audiovisual director in a tentative evaluation area; explanation of the project follows, and a request that his school district participate. The audiovisual director either arranges for a meeting involving curriculum supervisors, assistant superintendents, and building coordinators or puts me in touch with the person who can. Together we explore Project AIM and its ramifications for that school district. In every instance, my requests have been met with enthusiasm, and in every instance, school districts have been doing much more than what is requested as basic participation. A second meeting follows within a week or two, at which time, subject area specialists meet with me for an orientation. Upon completion of this orientation, the school district is ready to go. Arrangements have been made with all participating producers, who have agreed to ship films directly to evaluators within a week of the indicated preview date, and they have agreed to leave that print in the district for a period of three weeks. During this three weeks, the official evaluator is expected to preview the film and react. However, the film is available to all teachers in the school district who are interested. If the film is used by a number of teachers, they communicate their reactions to the official evaluator who then reports the feelings of the entire group.

The evaluation form is very simple. We have gone from a highly-organized, structured checklist to a very simple type of free response. We are looking for the kind of information that teachers and audiovisual directors will find valuable. This kind of information is best elicited through an unstructured free-response system. The evaluation form has three parts:

First, a standard bibliographic entry with the addition of a grade level, as determined by the evaluator, and a curriculum correlation based on the State Syllabus. The second portion of the form is a Summary and Evaluation, a very brief statement; generally three or four sentences. The third section is a Utilization Recommendation, again very brief; three or four sentences suffice.

Every film is evaluated by at least three teacher specialists. When the general reaction to a film is negative, we inform the producer involved and give him an opportunity to defend his product. If there is still some uncertainty after hearing from the producer, we consult with a State Education Department Curriculum specialist, who makes the final determination. The resulting evaluations will be edited and made available as a Division publication. By next September, we will have completed our first publication, which will deal with film media only, and will include NDEA area films produced since 1963. The publication will be a loose leaf format, and there will be a separate section for each curricular area. Administrators, audiovisual directors and others, who are in a position to recommend or purchase, will receive a copy. Next year, on a quarterly basis, we will issue supplementary sheets which should be inserted into this loose leaf binding. It is our expectation that we will be involved in the evaluation of other media within the near future.

We do not include in our publication any evaluation that is extremely negative. However, in order to fulfill the obligation of alerting teachers to weak material, we do list alphabetically every film title evaluated. If in the body of the publication, you do not find an annotation, you may draw the conclusion that evaluators reacted negatively to that title.

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